TECHNOLOGY DEPARTMENT

TEXTILE WORLD

A McGraw-Hill Publication ---------- SEPTEMBER • 1948

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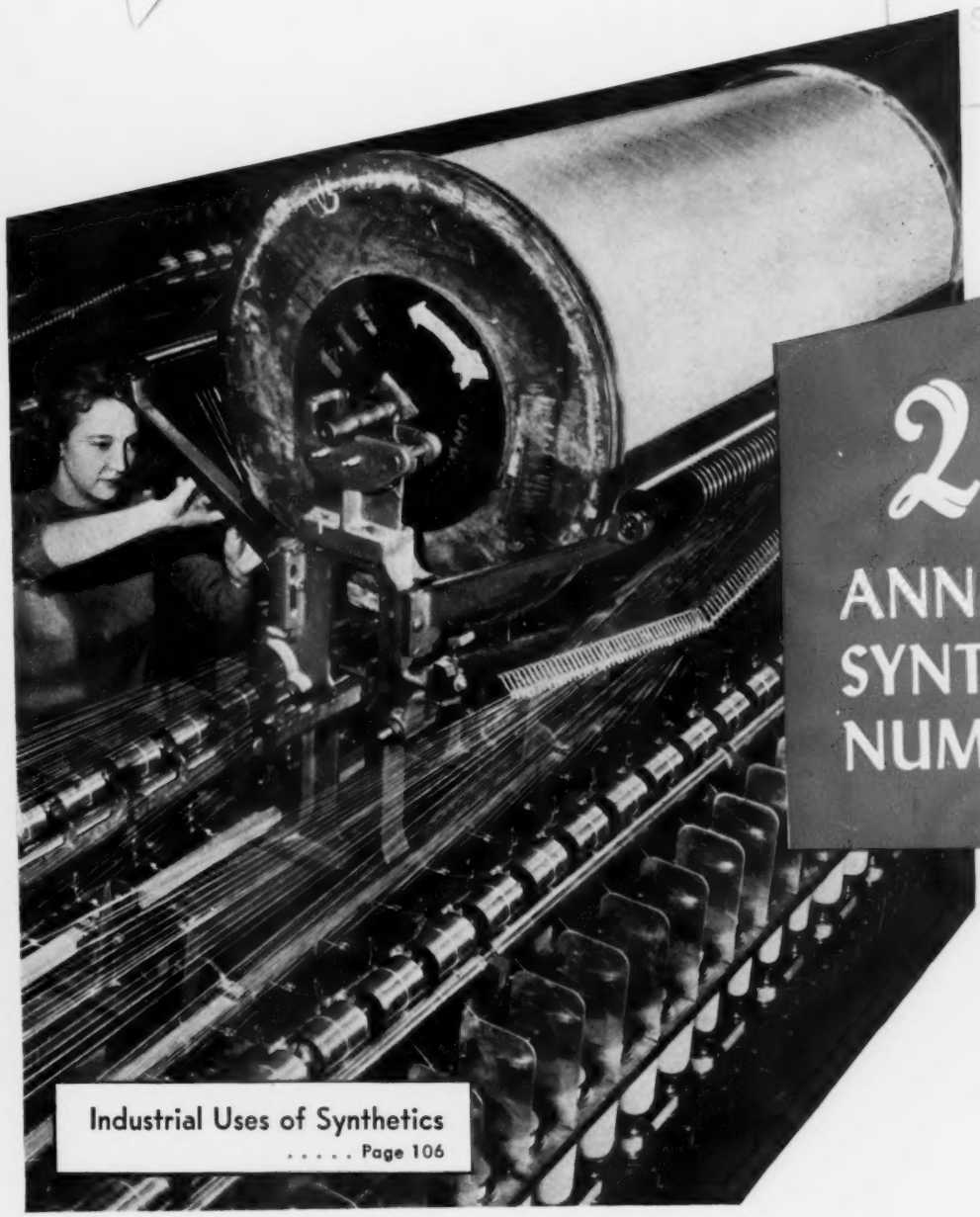

24th ANNUAL SYNTHETICS NUMBER

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THE *Long-Range* VIEW

More, Not Fewer, Complications

The days are gone when you could run a plant year in and year out on one setup. Not many years ago a good practical slasher-room supervisor bragged that in his plant slashing methods were so good they had not been changed in 20 years. We know that in the last few years his successor has altered them several times. In fact, the whole plant has been reorganized to permit fast changes as technology improves or the market wants different fabrics.

A young, aggressive group of operating executives are in charge. They are quick to try out such things as multi-motor slasher drives and a new starch stabilizer, and they are investigating direct-fired, pulsating-heat, hot-air, and other methods of drying. They figure that many changes they make pay off in two years or less. They don't worry whether what they do today will be made obsolescent tomorrow. If X equipment or process shows that it will pay for itself, in it goes. If tomorrow something still better comes along and will pay for itself, out goes X and in goes Y or Z.

In all branches of our industry, so many new methods and machines are being offered that anyone who will study, evaluate, and adapt them to his particular organization is sure to be rewarded accordingly. There are a bewildering number of methods and machines to choose from. In finishing, for example, there are the many possible ranges, various bleaches (including optical), dozens of "permanent" finishes, even the possibility of utilizing molten metals or ultrasonics. The last two named may seem to be in the "Buck Rogers" class today, but they are possibilities that cannot be dismissed as yet.

In spinning operations, there are the many possibilities of eliminating operations, of going to higher and higher drafts, of knowing what can be done through utilizing the latest testing instruments. The possibilities inherent in pot spinning, in double-twisting, and in some of the new headless packages cannot be overlooked.

There is a battle between (1) selection of fibers (natural or synthetic) to develop a wanted fabric and (2) selection of a finish to modify fibers to produce a desired effect. This year has seen two new synthetic fibers go into limited production; next year will see at least one more. The new fibers are characterized by the wide variety of forms that they can be modified to take.

There are many new high-speed knitting machines, and knit-goods finishing is becoming continuous for many types of fabric. Some woven-goods finishers are handling tricot fabrics. Monofilament knitting yarns are in use in finer and finer deniers.

The textile industry is being bound together by many factors. A cotton-mill man must now keep informed on synthetics and wool; a wool man, on synthetics and cotton. Weavers are installing tricot-knitting machines; and, as mentioned, knit goods are invading finishing plants originally designed only for woven goods. Divisions between the various branches of the industry are indistinct and often non-existent.

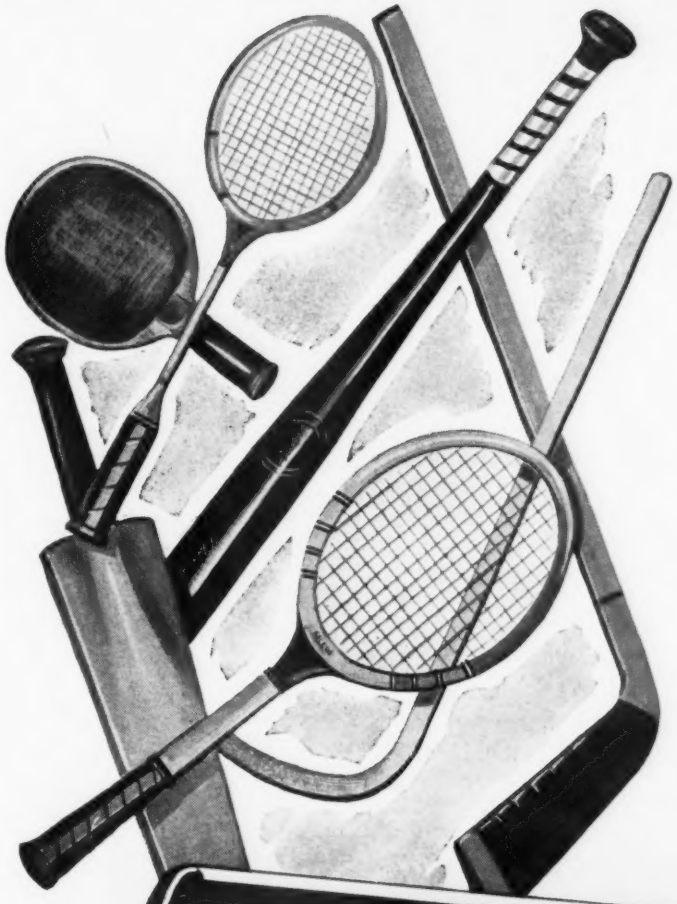
Mill construction is today being tailored to the industry's needs. There are provisions for keeping plants cleaner at less cost, for eliminating sweating and fogging, for exhausting or exchanging heat. Today there are methods for making power, water, heat, air, and drainage available for both present needs and future changes—at the same time with better provisions for servicing. There are proportionally as many new ideas in textile-mill construction as in process technology and machines.

The foregoing indicates just some of the developments that textile men must know about. Correct evaluation of them for a particular mill's requirement may determine whether or not that mill remains competitive.

At no time in decades, if ever, have there been so many things to choose among. The mere number indicates that many changes are taking place. There is no evidence that the number of possibilities confronting a mill operator will decrease: all evidence points to increase. The successful mill man will be the one who makes it a point to inform himself about all that could conceivably affect his phase of textiles.

C. H. Bendigo

You Fit Your Bat to Your Game



BUY V-BELTS THE SAME WAY

YOU'D never play badminton with a baseball bat. Or cricket with a tennis racket. Using *one* V-belt type to meet all the variations of V-drive operating conditions is out of place, too.

So Goodyear makes industry's most complete line of V-belts. Choose the proved construction that meets your drive requirements—built with oil-resistant, heat-resistant or non-static rubber, if needed.

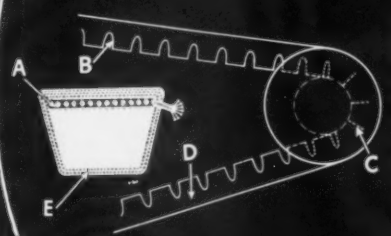
To end stretch and maintenance problems, there's Goodyear's exclusive COMPASS-V-STEEL belt, with wiry, super-strength steel-cable load carriers. To meet sudden overloads and shock stresses, Goodyear has belts sinewed with multiple, high-tensile, resilient cords. Still other Goodyear belts with single-plane, endless-cord load carriers deliver high flex-life on fast, small-pulley, short-center drives. And there's Goodyear's open-end V-belting with special body of high fastener strength fabric.

Drive-Fitted By the G.T.M.

To insure belting with the V-belt that's *right* for your particular problem, consult the G.T.M.—Goodyear Technical Man. He'll recommend the proper Goodyear V-belt to give you long, trouble-free service at the lowest cost in the long run. Write him c/o Goodyear, V-Belt Sales Dept., Akron 16, Ohio.

GOODYEAR INDUSTRIAL RUBBER PRODUCTS

GTM-Specified COMPASS-V-STEEL BELT



A Load-carrying section of endless high-tensile steel cable.

B Vents open between pulleys, dissipating heat.

C Vents compress rounding pulleys, giving continuous gripping surface.

D Highest quality rubber under-body.

E Sturdy, bias-laid fabric cover resists wear.

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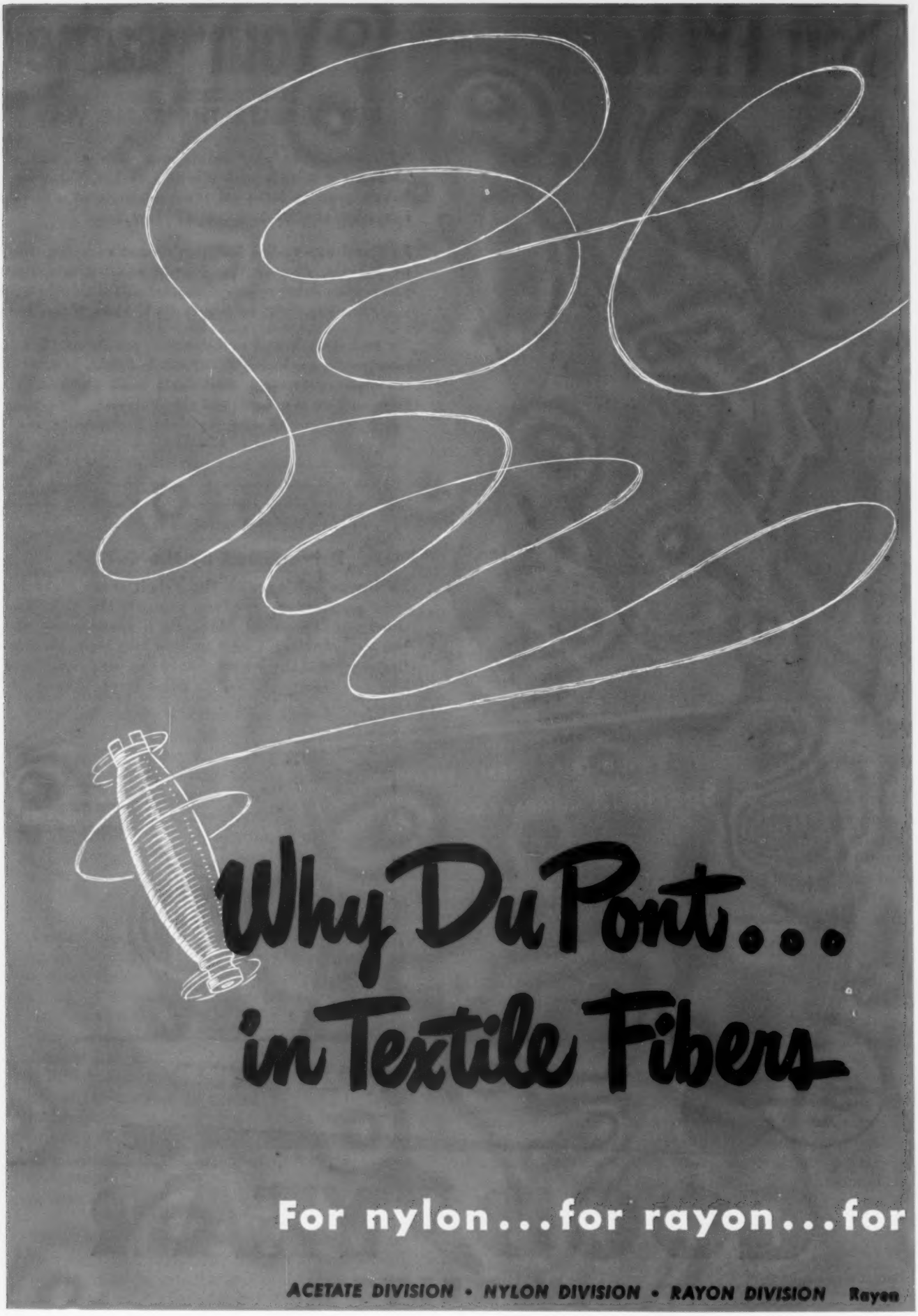
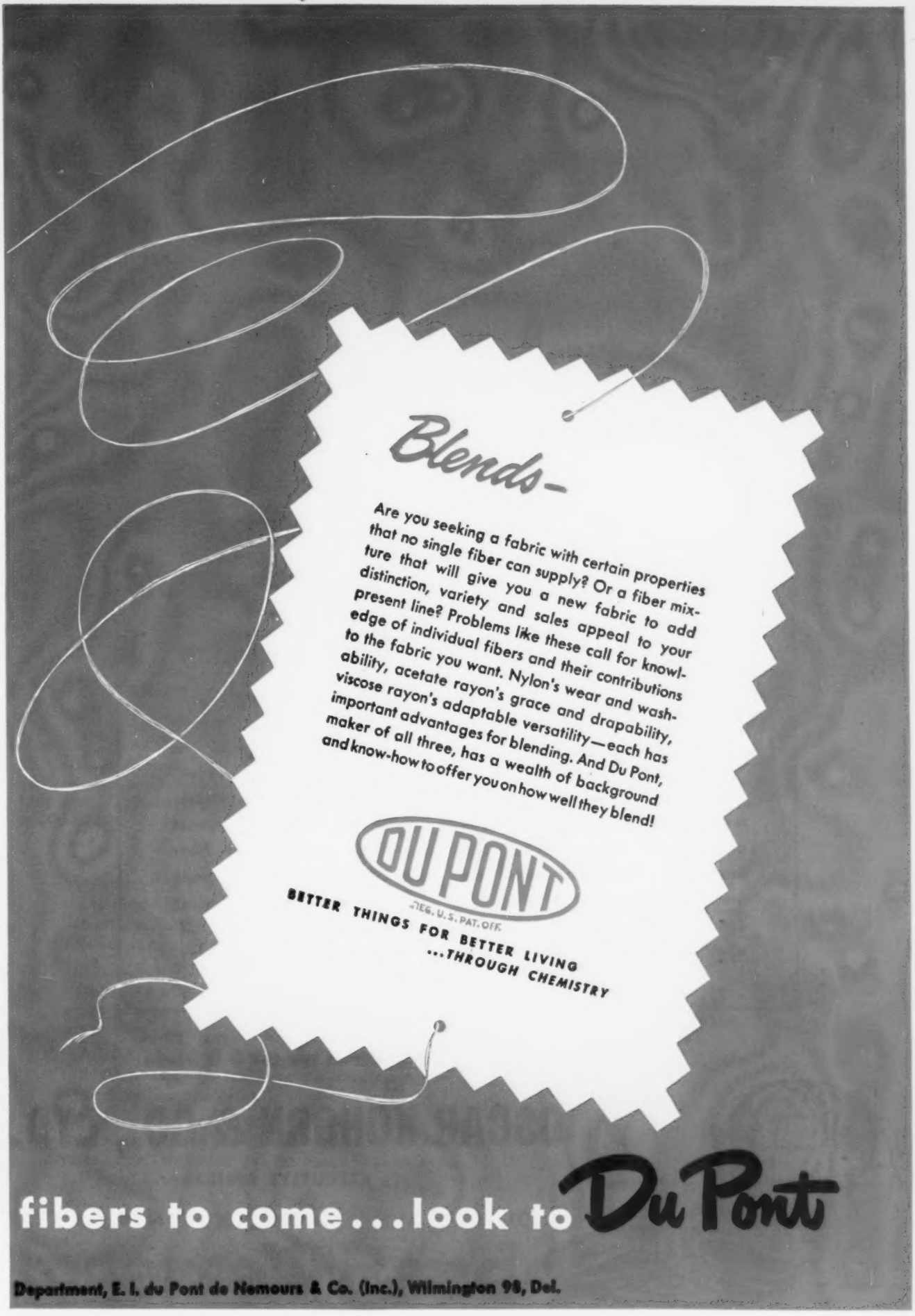
V-BELTS


Why DuPont...
in Textile Fibers
For nylon...for rayon...for
ACETATE DIVISION • NYLON DIVISION • RAYON DIVISION Rayon


Blends—
Are you seeking a fabric with certain properties that no single fiber can supply? Or a fiber mixture that will give you a new fabric to add distinction, variety and sales appeal to your present line? Problems like these call for knowledge of individual fibers and their contributions to the fabric you want. Nylon's wear and washability, acetate rayon's grace and drapability, viscose rayon's adaptable versatility—each has important advantages for blending. And Du Pont, maker of all three, has a wealth of background and know-how to offer you on how well they blend!
DU PONT
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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY
fibers to come...look to Du Pont
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KOHORN

NEW RAYON PLANT IN CHILE STARTS PRODUCTION

Shown here during construction, the new rayon plant of Fabrica Victoria de Puente Alto. S. A., built and equipped by, and under the technical management of Oscar Kohorn & Co., Ltd., is now producing rayon. Kohorn machinery, Kohorn's patented chemical processes and Kohorn operating management combine to give Chile its newest and largest rayon plant. Filament rayon, rayon staple fiber machinery, power, chemical and water treatment plants were installed in record time. . . . Thus another complete project demonstrates that Kohorn is better qualified to establish the additional rayon plants that world markets need . . . without delay.

COMPLETE PLANTS for Filament Rayon, Rayon Staple Fiber and Cellophane equipped in 12 months.

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New building

New equipment

all Atwood *Throwing Machinery*

This new plant of Belding-Hemingway-Corticelli at Morristown, Tenn. is as modern inside as it looks outside. It is Atwood-equipped throughout to produce synthetic and combination yarn for its own use and customers' use.

Redraw

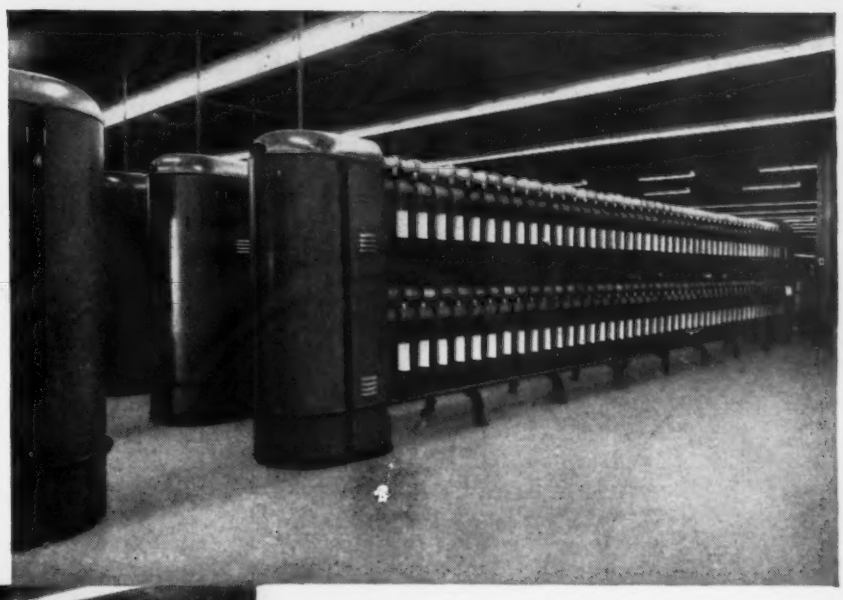
High speed, accurate tension control

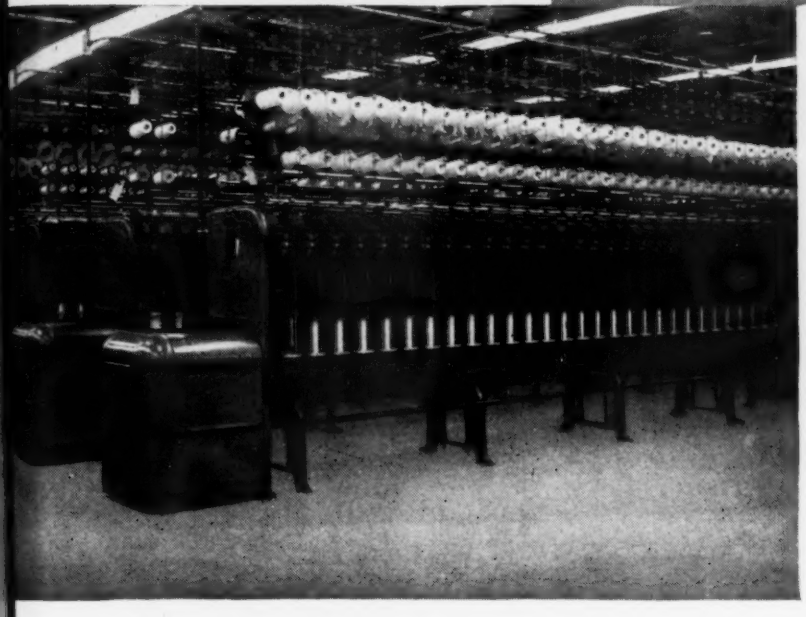
The redraws are Atwood Model 200's, which can process all types of synthetic yarns at a high rate of yards per minute. Accurate control of tension is achieved through use of the disc tension device. Drive and traverse mechanism are totally enclosed. The speed is quickly and precisely regulated by the variable speed drive.

Up-Twisting

Accurately positioned takeup

The up-twisters are Atwood Model 110's. Special design of bobbin hanger maintains positive alignment between the cork rollers and takeup bobbins, insuring straight wound bobbins. Spindles, pivot swings and anti-wear spindle brakes are mounted on a heavy, longitudinal, pre-spaced spindle rail which insures rigidity of the frame. One endless, lapless belt for uniform, vibrationless spindle speed.





Ring twisting

Automatic stop motion for each end and ply

The ring twisters are Atwood Model 10's equipped with magazine creel, individual stop motion for each spindle, rigidly mounted rings and holders, and full length spindle separators. The stop motion built into the feed roll units stops both feed rolls and the spindle, simultaneously. Knots can be tied in single ends, avoiding roller laps and drop ply. One endless, lapless belt gives uniform, vibrationless spindle speed.

UNIVERSAL WINDING COMPANY

ATWOOD DIVISION

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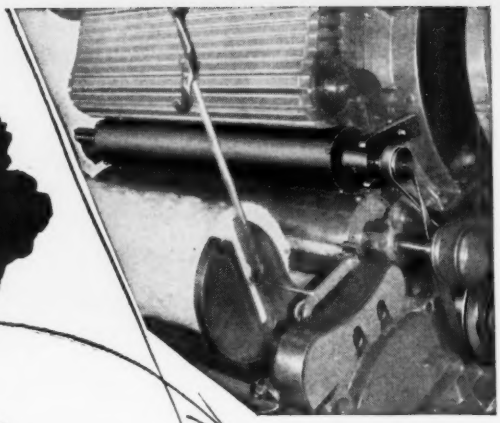
Winding and Twisting Machinery for Natural and Synthetic Yarns

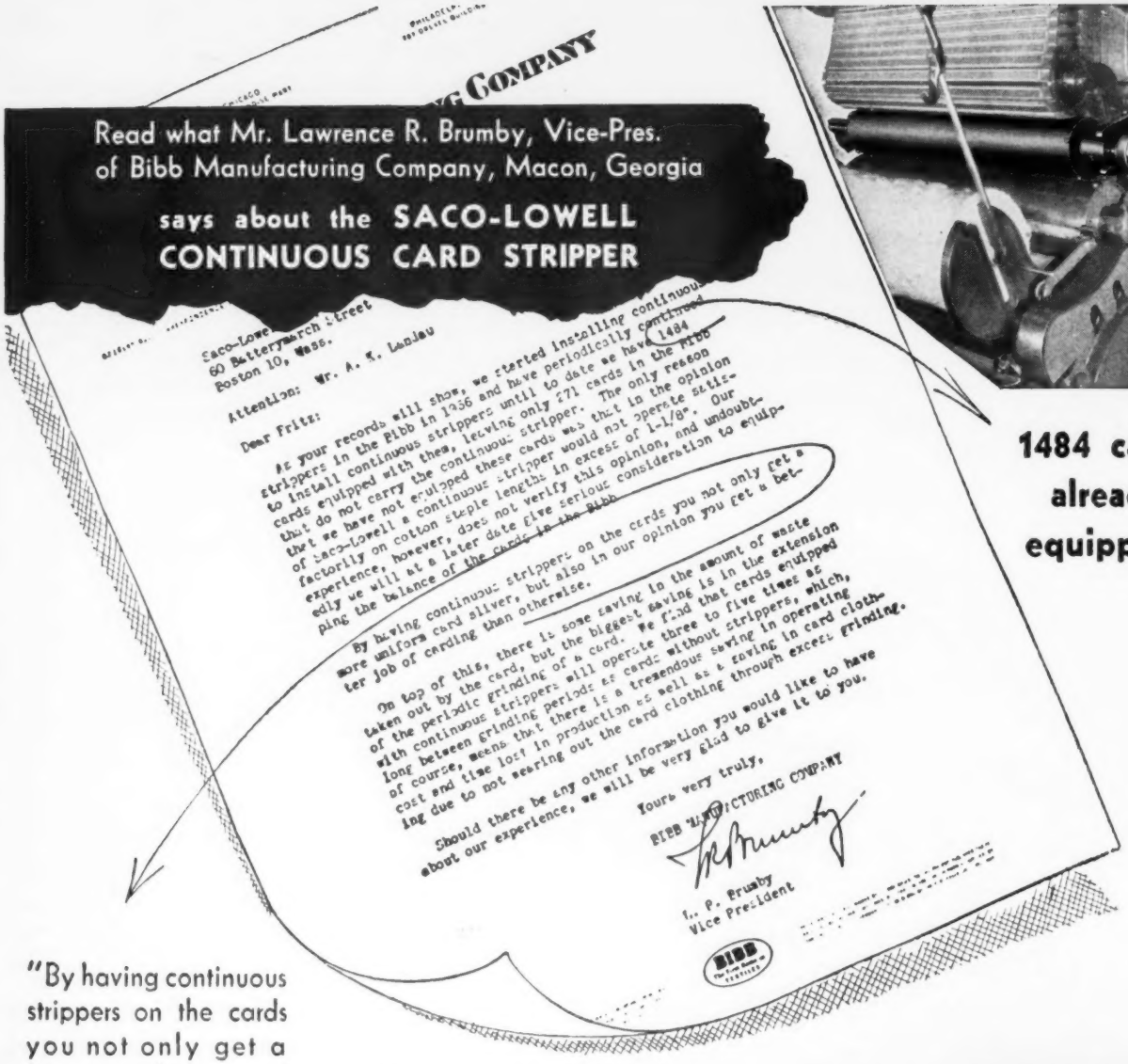
UNIVERSAL *with its Atwood division, builds a complete line of* THROWING MACHINERY

Read what Mr. Lawrence R. Brumby, Vice-Pres. of Bibb Manufacturing Company, Macon, Georgia

says about the **SACO-LOWELL CONTINUOUS CARD STRIPPER**



1484 cards already equipped!



Saco-Lowell
60 Batterymarch Street
Boston 10, Mass.

Attention: Mr. A. K. Lanlau

Dear Fritz:

As your records will show, we started installing continuous strippers in the Bibb in 1936 and have periodically continued to install continuous strippers until to date we have 1484 cards equipped with these, leaving only 271 cards in the Bibb that do not carry the continuous stripper. The only reason that we have not equipped these cards was that in the opinion of Saco-Lowell a continuous stripper would not operate satisfactorily on cotton staple lengths in excess of 1-1/8". Our experience, however, does not verify this opinion, and undoubtedly we will at a later date give serious consideration to equipping the balance of the cards in the Bibb.

By having continuous strippers on the cards you not only get a more uniform card sliver, but also in our opinion you get a better job of carding than otherwise.

On top of this, there is some saving in the amount of waste taken out by the card, but the biggest saving is in the extension of the periodic grinding of a card. We find that cards equipped with continuous strippers will operate three to five times as long between grinding periods as cards without strippers, which, of course, means that there is a tremendous saving in operating cost and time lost in production as well as a saving in card clothing due to not wearing out the card clothing through excess grinding.

Should there be any other information you would like to have about our experience, we will be very glad to give it to you.

Yours very truly,

BIBB MANUFACTURING COMPANY

L. P. Brumby
Vice President

"By having continuous strippers on the cards you not only get a more uniform card sliver, but also in our opinion you get a better job of carding than otherwise."

With cotton and operating costs at current levels, Continuous Strippers on the cards now operating will earn an annual return ranging from 75% to 80% . . . on new cards, from 88% to 92%. At this rate, your saving will liquidate the capital investment in about 14 to 16 months.

Saco-Lowell Continuous Strippers can be installed on almost all makes of cards. A special catalog giving technical and engineering data will be sent promptly on request . . . write our nearest office.

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CONTINUOUS CARD STRIPPER

SACO-LOWELL

60 BATTERYMARCH STREET, BOSTON 10, MASS.

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SALES OFFICES: CHARLOTTE • GREENVILLE • ATLANTA

ANOTHER NACCONOL NR APPLICATION

Here's a Hot Tip: Use Wetter Water on Fires

So you think water is wet? Hah! Such old-fashioned ideas. The National Aniline Division has got something that is so wet it will give water a soaking. It's called Nacconol, a handy little chemical which can do to water what whisky will do to soda. Make it penetrating, that is.

Nacconol was given a brisk workout yesterday in a special demonstration at the foot of Court St.

A group of student firemen under the direction of George A. Leo, superintendent of fire apparatus, and Dr. O. M. Morgan of National Aniline lighted piles of old furniture and straw.

Then they sprayed the fire with water, just to show they haven't lost touch with the traditions of the past. The fire went out. But, and this is important, it smoldered. Another pile was set on fire.

This time the fire-fighters were using water wetted with Nacconol. The fire gave a half-hearted hiss and quit. It didn't even smolder as was the wont of the fires of yesteryear.

Nacconol, explained Leo and Dr. Morgan, goes right after Class A blazes. It gives water a quality of penetration which enables it to get right down in the pores where it can do battle with the flames readily.

So there it is. Next time you feel blue about getting soaked in the rain, think of Nacconol and feel good again.

BUFFALO COURIER-EXPRESS

1/8% NACCONOL *Solution*

Wets 3 Times Faster!

For any wetting or washing operation, remember

NACCONOL* NR

AMERICA'S LEADING SYNTHETIC DETERGENT

COSTS LESS THAN SOAP

DOES MORE THAN SOAP

WASHES • WETS • FOAMS • DISPERSES
EMULSIFIES *AT ONE LOW COST*

Let us show you how much NACCONOL NR can save you

National Aniline DIVISION • ALLIED CHEMICAL & DYE CORPORATION

40 RECTOR ST., NEW YORK 6, N.Y. • BOSTON • PROVIDENCE • PHILADELPHIA • CHICAGO • SAN FRANCISCO • PORTLAND, ORE. GREENSBORO • CHARLOTTE • ATLANTA • NEW ORLEANS • CHATTANOOGA • TORONTO

*Reg. U.S. Pat. Off.

TERGITOL *wetting agents are*

SPECIFIC

If your textile operation is one of the following, a specific TERGITOL wetting agent can save you money and processing time:

WOOL CARBONIZING . . . remarkable wetting action and complete stability.

DYEING . . . rapid and level dyeings with all types of colors.

MERCERIZING . . . greatly increased speed, and chemical stability.

SHRINKING . . . instant wetting for caustic shrinking of knitted goods.

BLEACHING . . . no preliminary boil-out needed for mercerized and grey cotton stocks.

TWIST SETTING . . . increased speed of wetting.

TERGITOL 7 . . . for dilute aqueous solutions containing less than 1 per cent dissolved solids.

TERGITOL P-28 . . . for water solutions containing 2 to 5 per cent inorganic salts or 1 to 2 per cent alkalies.

TERGITOL 4 . . . for solutions containing from 1 to 10 per cent acids or salts, or 2 to 5 per cent alkalies.

TERGITOL 08 . . . for solutions containing 10 to 20 per cent acids, alkalies, or salts.

TERGITOL EH . . . for solutions containing 20 to 30 per cent dissolved inorganic acid, base, or salt.

CARBIDE and CARBON CHEMICALS CORPORATION

Unit of Union Carbide and Carbon Corporation

30 East 42nd Street UCC New York 17, N. Y.

Offices in Principal Cities

In Canada:

Carbide and Carbon Chemicals, Limited, Toronto

TERGITOL is a registered trade-mark of C & CCC.

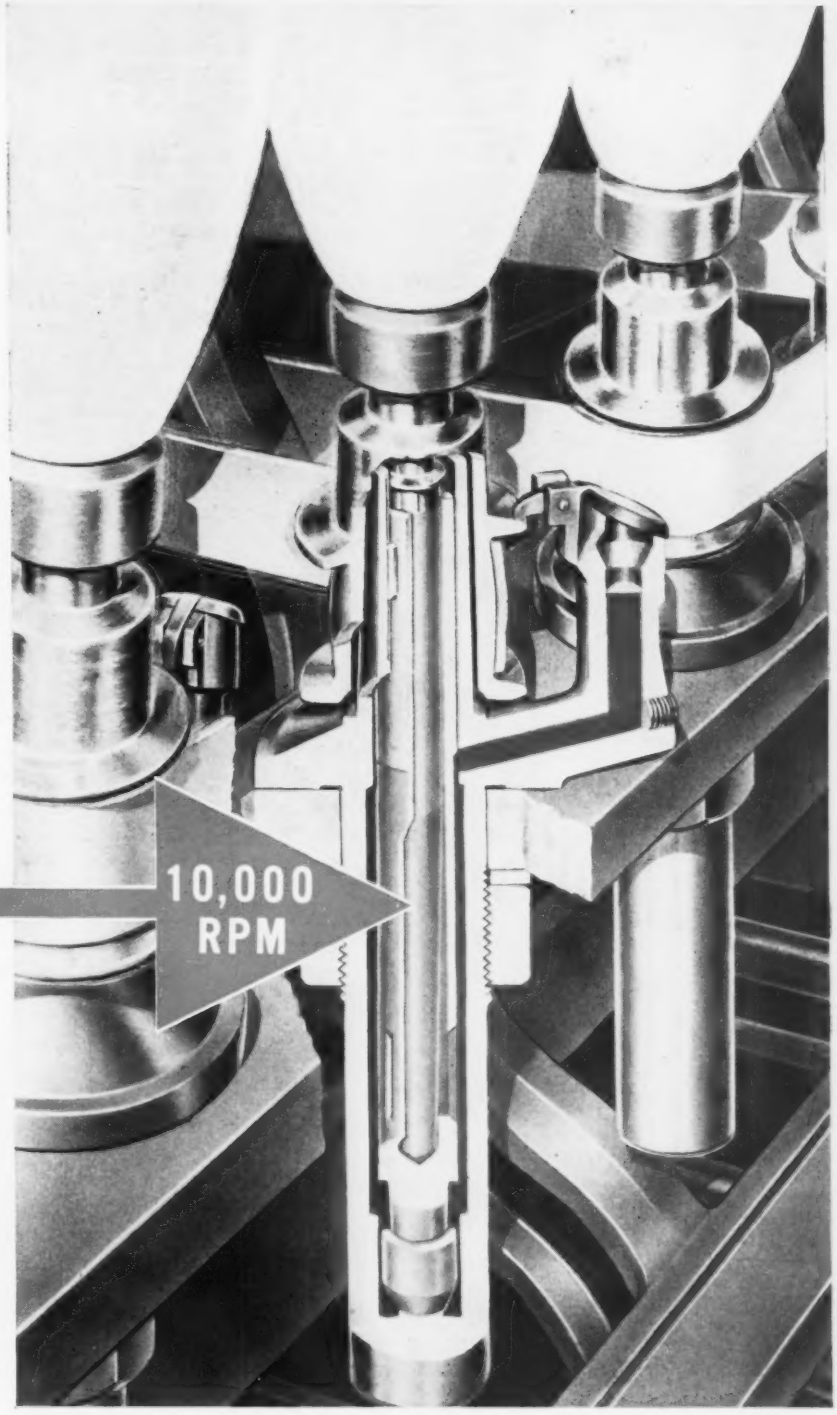
The five TERGITOL wetting agents are powerful, fast-acting textile penetrants. And they are chemically stable under severe operating conditions. These easy-to-use liquids are inexpensive—a little goes a long way. They are available from local warehouse stocks. For help in choosing the most suitable TERGITOL wetting agent for your application call or write our nearest office. When writing, please address Dept. **P-9**

Inside Knowledge on Lubrication Problems

– SPEED –

This is One of a Series of Messages on Common Problems in Your Plant

Pacing a Whirl-wind



SPINNING at 10,000 revolutions a minute, this textile spindle is one of the fastest-moving mechanisms in all industry.

Speed like this means special opportunities for friction, wear and vibration. An unsuitable oil may act as a "drag" on the spindle, increasing power consumption.

Quick-acting Gargoyle Velocite Oils are the answer.

FIRST, their unusual lubricity and resistance to thickening and gumming keep spindles spinning freely . . . minimize friction and spindle "drag."

SECOND, they bond intimately with metal . . . STAY PUT in spite of terrific speed, guard against wear and dampen vibration.

THIRD, their unusual stability and long life minimize "black oil" formation, reduce the necessity for cleaning spindle bases and blades.

Get these oils in your spindles now for lower maintenance costs, important power savings!

SOCONY-VACUUM OIL CO., INC.
and Affiliates: Magnolia Petroleum Company
General Petroleum Corporation

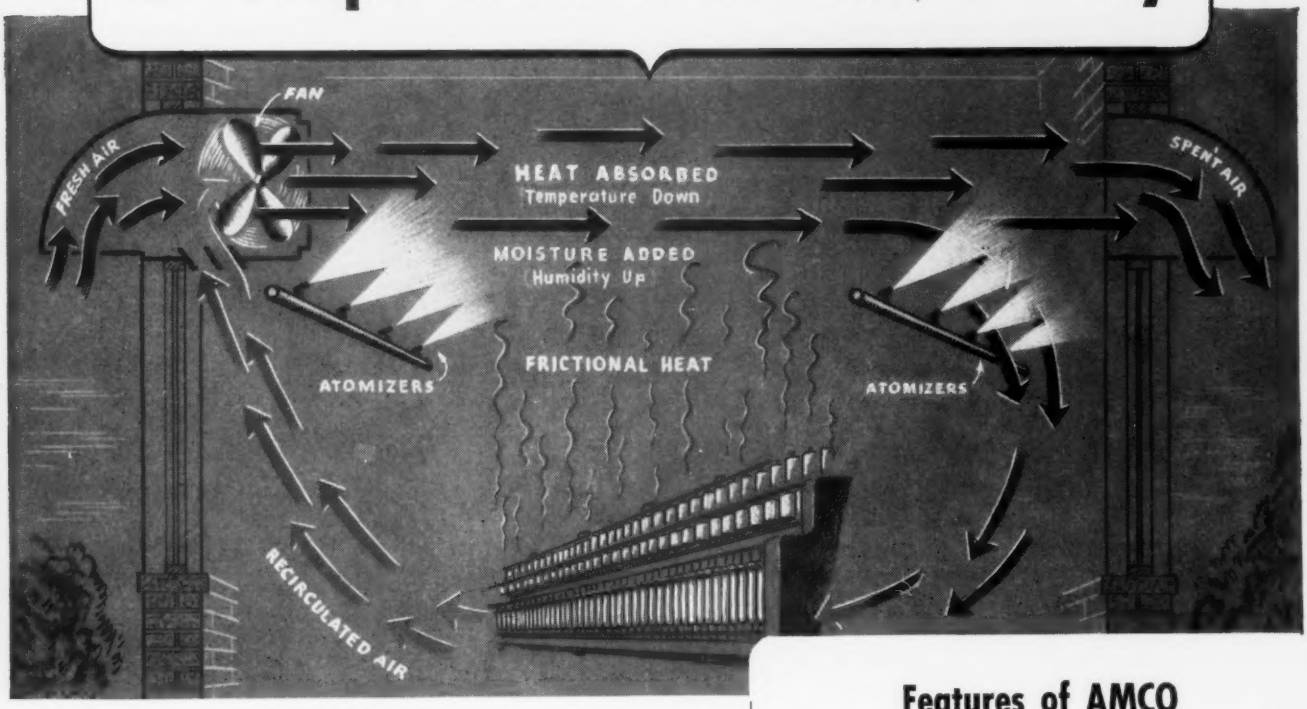
GARGOYLE Lubricants

SOCONY-VACUUM

Socony-Vacuum Correct Lubrication

FOR EVERY MACHINE . . . EVERY OPERATING CONDITION

Nothing cools so simply as evaporation...the AMCO way



• With completely automatic AMCO Evaporative Cooling system a controlled amount of fresh air is drawn into the mill from outside and combined with some re-circulated air. Spray from atomizers introduces moisture and relative humidity is raised to the desired point. Frictional heat is absorbed by evaporation of moisture thus reducing excessive room temperature. Spent air is exhausted automatically through controlled vents.

Simple, flexible, economical—AMCO treats each room as a separate unit. No expensive changes are necessary . . . no air ducts to install . . . no jump in maintenance costs. What AMCO humidification and cooling has done for many well-known, progressive textile mills, it can do for you. Let an AMCO engineer show you the way to better product quality and increased output.

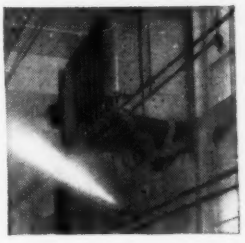
AMCO

HUMIDIFICATION and COOLING

AMERICAN MOISTENING CO. AFFILIATED WITH GRINNELL COMPANY, INC.

PROVIDENCE, R. I. • BOSTON • ATLANTA • CHARLOTTE

Features of AMCO Humidification and Cooling



Reduces excessive temperature and holds relative humidity at point best suited to fibre and process.

Permits faster machine speeds in high friction (heat) areas.

Assures evener yarn counts and increases breaking strength.

Gradually increases regain for good roving and consequent better spinning.

Drafting of fibres smoother and more compact.

Waste and fly greatly reduced.

Increases worker comfort.

Easier to install—minimum disruption.

Amco Evaporative Cooling utilizes your present humidification system.

High flexibility to meet changing room conditions.

No cumbersome ducts to require cleaning.

Minimum maintenance.

SANDOZ PRESENTS

the color achievement of the month

Pink That Cures Travel Blues

...BY UNITED

There's extra sales appeal in a fabric finished with UNIDURE, the permanent crease-resistant finish that spares the traveler the blues of a wrinkled wardrobe.

And there's extra sales appeal, too, in the fashionable pink selected by The United Piece Dye Works, one of many great firms in the textile industry that call on Sandoz for colors of quality.

The Sandoz policy of "thinking ahead with textiles" has led to developments in dyestuffs of great significance to both wearer and dyer. Among these developments — promising "service fastness" to the ultimate user and operating efficiencies to the mill — are special dyestuffs for rayon which must withstand anti-crease treatments without any loss in shade or fastness. Those include the well-known:

PYRAZOL FAST BLUE FLL
PYRAZOL FAST BLUE 2GLN
PYRAZOL FAST BROWN BRL
PYRAZOL FAST ORANGE 4G
PYRAZOL FAST YELLOW RSW
PYRAZOL FAST GARNET BL
PYRAZOL FAST VIOLET 2R
and the latest blues: PYRAZOL FAST BLUE GUL, RUL and LUL

For acid, chrome or direct dyes . . . or auxiliary chemicals . . . for both natural and synthetic fibres . . . be guided by the successful "color achievements" you see in these Sandoz advertisements.

SANDOZ CHEMICAL WORKS, INC., 61 VAN DAM STREET, NEW YORK 13, N. Y.

Application laboratories and stocks at Boston, Philadelphia, Charlotte, Los Angeles, Toronto. • Other branches at Providence, Paterson, Chicago.

DETROIT PUBLIC LIBRARY

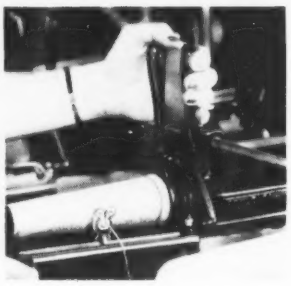
SANDOZ *thinks ahead with textiles*

SANDOZ

FIRST CLASS ..Special Delivery

from Universal *"PreciseWind"* Cones

When rayon . . . or *any* synthetic filament yarn . . . is put up on Universal Cones, you can be sure that the quality of the yarn has been protected and preserved in the winding . . . and that the yarn is in the best possible form for supplying warping creels, knitting machines and all types of filling winders.



FEATURES of the No. 50 Precision Winding Machine

Which Give
Lower Winding Costs
Better Package Quality

ONE BELT FOR ALL SPINDLES — Straight Belt "L" Drive gives uniform speed for all spindles, permits slow start, eliminating yarn strain. Use of *genuine* Universal Straight Belt "L" Drive protects against belt slippage, excessive belt wear.

DOUBLE STARTING HANDLE — Easy finger squeeze brings belt into contact with spindle driving pulley. Handles are about shoulder height, no stooping – easy for operator to inspect yarn on package. Stationary head avoids belt stretch.

UNIVERSAL WINDING COMPANY

Providence, Boston, Philadelphia, Utica, Charlotte, Atlanta, Chicago, Los Angeles; Montreal, Hamilton, Canada; Manchester, England; Paris, France; Basle, Switzerland

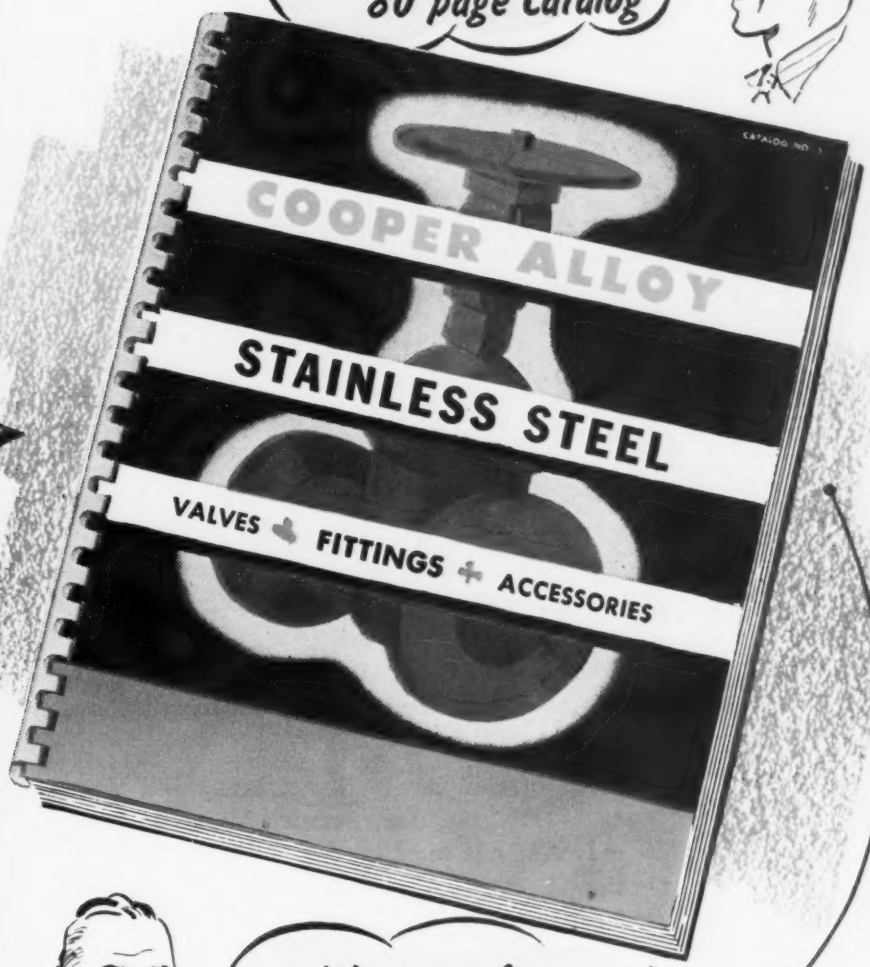
Agents in every principal textile center throughout the world

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

Universal Precision Winding USED FOR MORE THAN 90% OF ALL SYNTHETIC FILAMENT YARN ON CONES

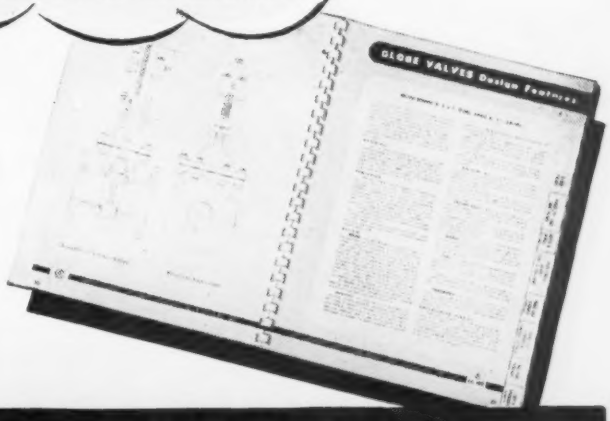
IF YOU NEED CORROSION RESISTING VALVES FITTINGS and ACCESSORIES

you'll want this New, Complete, Concise, 80 page Catalog



It's yours for the asking!

WRITE FOR NEW CATALOG #51-L



COOPER controls the production of these corrosion resisting products from design and casting to X-ray inspection and machining . . . for each step is performed on the more than three acres of plant facilities available to serve Cooper customers.

Est. 1922

SOLD THRU THE LEADING STAINLESS STEEL DISTRIBUTORS

Specialists in Corrosion Resisting Stainless Steel

THE COOPER ALLOY FOUNDRY CO.

HILLSIDE, NEW JERSEY

HYCAR AMERICAN RUBBER LATEX...

a new material for impregnating and coating fabrics, fibres, and threads

HYCAR latex, when used as a coating or impregnant for even inexpensive materials, imparts many desirable properties not easily obtained with other coatings and impregnants.

For example, high resistance to oils, chemicals, abrasion, and flexing—to name a few—are added in very desirable degrees by HYCAR latex, used as an impregnant or a coating. And HYCAR-impregnated materials may then be coated with any one of a number of other materials to impart additional properties.

All of this can be done, safely and simply, with HYCAR latex, because it's an inherently easy and safe material to handle. No vulcanization is required. Normal drying times are used. No explosive solvents need be handled. Nor is there any need for cumbersome and costly solvent recovery systems.

We would be glad to work with you on any problems relating to the use of HYCAR American rubber latex. For more information write Dept. HL-5, B. F. Goodrich Chemical Company, Rose Building, Cleveland 15, Ohio.

Hycar

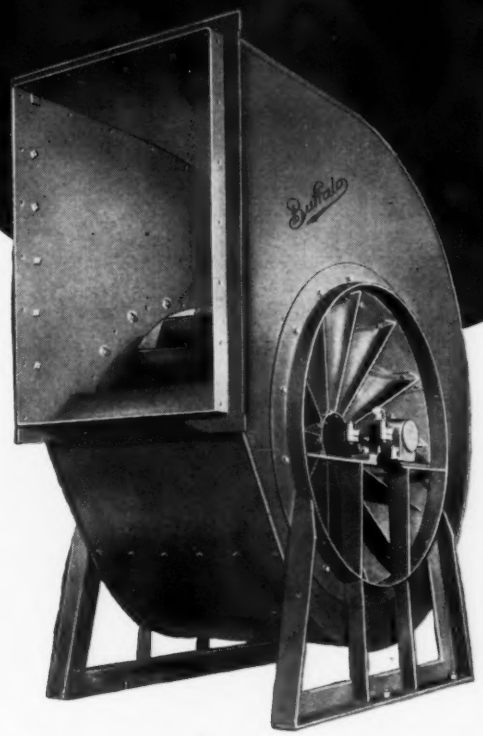
Reg. U. S. Pat. Off.

American Rubber

B. F. Goodrich Chemical Company

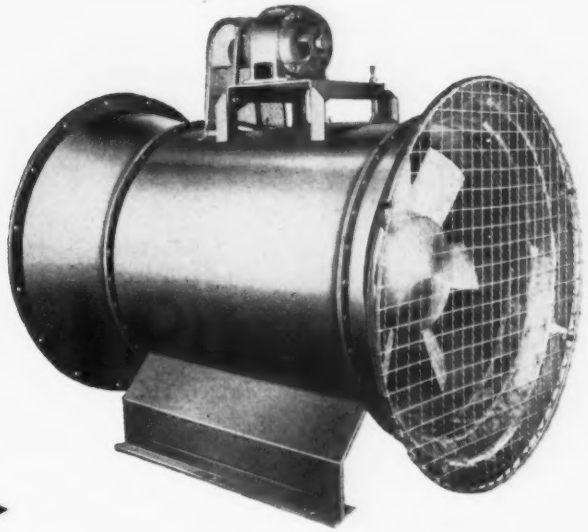
A DIVISION OF THE B. F. GOODRICH COMPANY

This Fan Selection GIVES YOU PEAK PERFORMANCE



"Buffalo" LIMIT-LOAD FANS

FOR BEST results in your air handling problem, you need *more* than a well-engineered, well-constructed fan. It's just as important to have a fan *designed for that job!* That's why "Buffalo" builds so many types. For example, the "Buffalo" Limit-Load Fan is ideal for high-volume, low-pressure ventilation—especially where bad duct connections (elbows near inlet, etc.), are encountered. Directional inlet vanes, perfectly balanced rotors and improved housing scroll design make for exceptional air delivery at low costs in these sturdy fans. *"Buffalo" representatives in principal cities can give you unbiased advice on the fan to serve you best!*



"Buffalo" AXIAL FLOW FANS →

BOTH types are popular, proven and efficient. Certain conditions, however, definitely call for Axial Flows. These are ideal for *straight* duct connections—since they derive their quiet, turbulence-free air delivery from their "beeline" design. As a "booster" for an existing system—or a single unit for low-cost ventilation of mine, ship or factory—in food cooling—industrial exhausting—diesel cooling—many other installations, duct-connected or not—it will pay you to check into "Buffalo" Axial Flow Fans. *Write us about your air problem!*

BUFFALO FORGE COMPANY

184 Mortimer Street Buffalo, New York

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.
Branch Offices in All Principal Cities

"Buffalo" FANS for EVERY APPLICATION

it's yours . . . free!

SEND FOR THIS 50TH ANNIVERSARY HAND BOOK ON HOW TO CARE FOR YOUR FLOORS!

for wood, linoleum, rubber, terrazzo, concrete, tile, cork, composition and marble

Get this reference book of Modern Maintenance Methods for floors. Contains practical hints on cleaning, refinishing, polishing and sealing all types of floors under regular and special conditions of service.

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Please send free a copy of your new Handbook
"FLOORS WITHOUT FLAWS"

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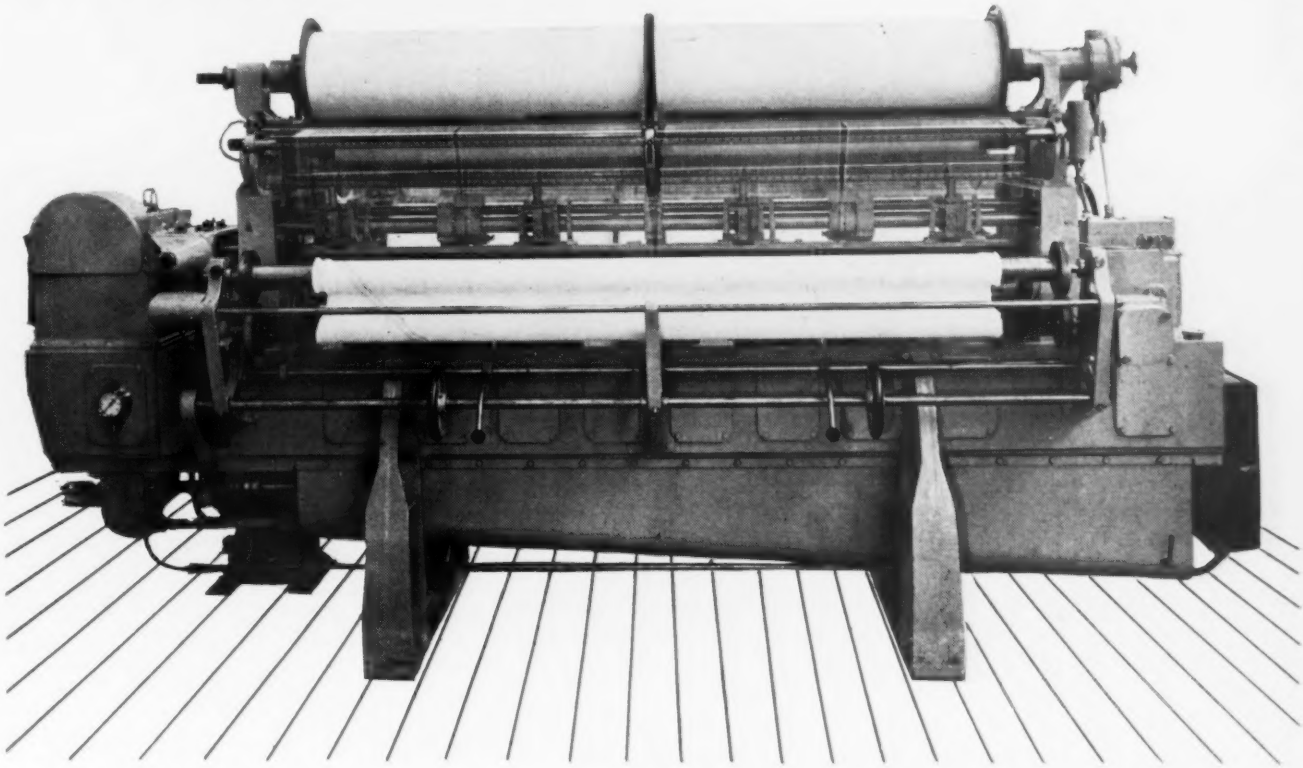
FNF High Speed Warp Knitting Machine

operates without Vibration or Clatter!



Extreme simplicity and noiseless efficiency are only two of the outstanding improvements incorporated in the FNF. Here are just a few more of its practical advantages:

- **Easily knits 1000 courses a minute! Knits 35 to 40 linear yards of 84 inch dress fabric per hour!**
- **Engineered for long life with minimum maintenance.**
- **Electrically controlled positive warp feed continuously delivers yarn supplies without any supervision.**
- **Compact. Requires less than 12 ft. by 4 ft. floor space.**
- **New type tubular compound needle requires no adjustment . . . knits any yarns from 15 denier up to an aggregate of 400 denier or equivalent count.**

An FNF is installed in the Textile Research Department of the American Viscose Corporation at Marcus Hook, Pa. See it in operation . . . study its possibilities. A completely illustrated manual is available for your further study. Write for your copy today!

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TOP WEAVEROOM EFFICIENCY

Calls for the Full Cooperation of These Three

When you come right down to it, C&K has a one-track mind—*to make looms that make more money for mills.* And C&K Looms make money when they're given the chance to do so. But that "*chance*" means far more than uncrating new looms and hooking them up to a power line!

It means that the first concern of mill management—in order to get top production and quality right from the start —is to do these things:

Enlist the Interest of Workers in all features and advantages of the new looms. Show them the importance of accurate setting and care in starting up. In this instruction, C&K can give valuable help.

Control the Conditions of filling yarn, warps, selvages . . . and also weaveroom temperature and humidity, which should be constant 24 hours a day. Enlist the cooperation of workers in checking all these factors.

This three-way cooperation rests on the initiative of mill management. And where that initiative has been accepted, it has definitely proved to be the primary *preface to profits which are there to be gained,* in every new Crompton & Knowles Loom.

Crompton & Knowles Loom Works

WORCESTER 1, MASSACHUSETTS, U. S. A.

PHILADELPHIA, PA. • CHARLOTTE, N. C. • ALLENTOWN, PA. • CROMPTON & KNOWLES JACQUARD & SUPPLY CO., PAWTUCKET, R. I.

SERVICE . . .

AS YOU WANT IT . . .

WITH . . .

Tailored Color

Florence Tailored Color is literally an on-the-platter Service . . . **complete** processing of cotton, wool, synthetic and blended yarns including dyeing, bleaching, finishing and winding.

Florence service combines the scientific facilities and skilled chemical knowledge of our laboratory colorists who *Know* the art of analyzing color and the processing of dyed yarn **tailored to your exact color requirements!** The color you specify, you get; in the shade, color-fastness and quality you must have.

This scientifically controlled **Quality** in *Florence Tailored Color* is something "extra." It assures quality products for your customers.

Either you supply the yarn to be processed or, if possible, we obtain the quality you want and tailor-color it to your specifications. In each instance you get *Tailored Color.*

Specify *Florence Tailored Color* and get Service . . . **as you want it!**

FOR *Tailored Color* WRITE

FLORENCE THREAD CO., INC.

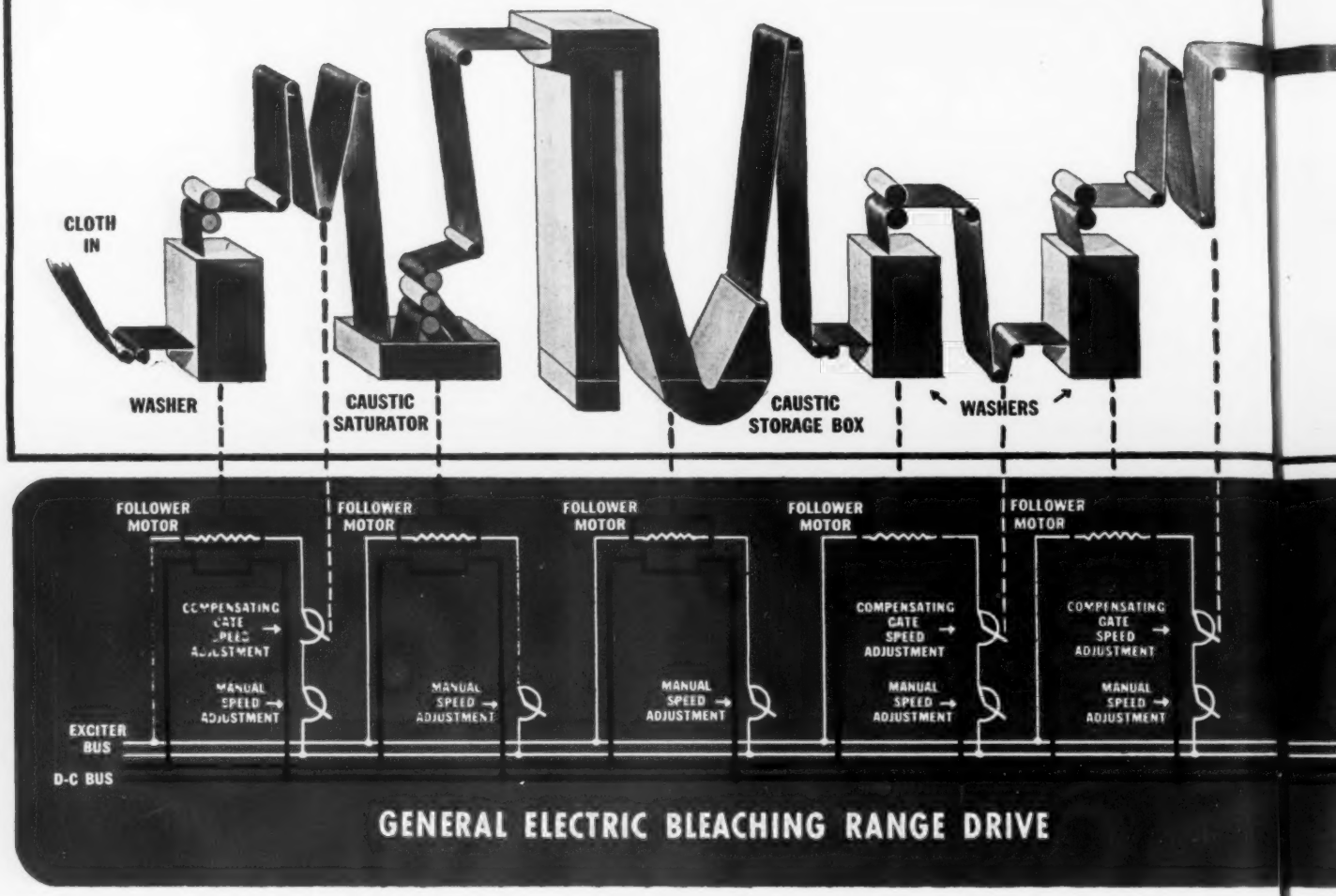
Established 1894

FAIRVIEW STREET • RIVERSIDE, NEW JERSEY

New York Sales Office — 55 W. 42d St., N. Y. 18, N. Y.

Package Dyers and Processors of Cotton, Wool, Synthetic and Blended Yarns

BLEACHING SPEEDS



GENERAL ELECTRIC BLEACHING RANGE DRIVE

When mills switch from the kier method of bleaching to an electrified continuous range, bleaching speeds can be boosted as high as 275 ypm — quality control is simplified — finishing costs come down!

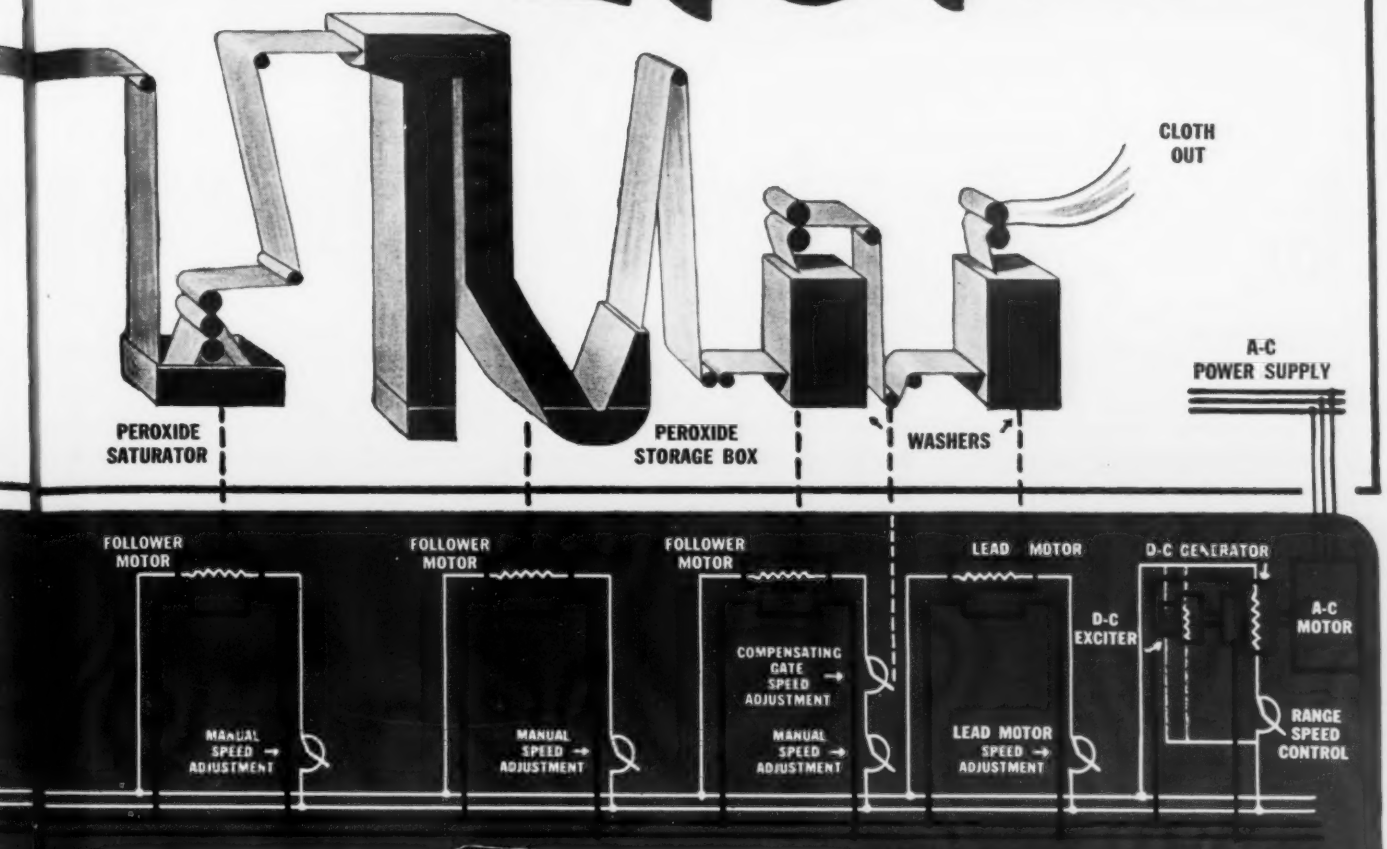
About 15 years ago, it became evident that the kier or batch method of bleaching could not be speeded up enough to meet the demands of modern high-speed textile finishing. The cost of handling cloth in batches was too high. Quality standards were difficult to maintain and serious limitations were placed on a bleaching department's capacity.

The answer was found in today's electrically-driven, high-speed continuous bleaching ranges. By handling cloth in one continuous length, "in-between" losses have been eliminated completely. Quality is high since each length of cloth receives identical treatment. Individual units in the range can be operated at maximum capacity; thus bleaching-department output is higher and finishing costs less.

For most range applications a G-E adjustable-voltage d-c drive as shown in the above diagram is most satisfactory. For applications where special conditions prevail, G.E. can supply other types of drives such as constant-voltage d-c, adjustable-speed a-c, and turbine-electric d-c.

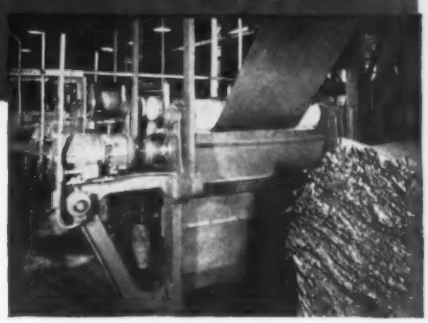
Simple yet inexpensive, control of fabric tension or speed is accomplished with compensating gates, soft motors, or other co-ordinating devices such as photoelectric loops, speed regulators and current (tension) regulators. For full data on these drives, write for Bulletin GEA-5010. *Apparatus Dept., General Electric Company, Schenectady 5, New York.*

UP TO 275 YPM!



The essential equipment ... AND WHAT IT DOES

The diagram above shows symbolically a G-E adjustable-voltage d-c range drive with a compensating gate co-ordinating system. A single motor-generator set energizes a common d-c circuit which supplies armature voltage to all the range motors. The voltage of this circuit (and thus the speeds of the connected motors) is adjusted by a common generator-field rheostat. Excitation for the generator and the range motors is supplied from a common constant-voltage exciter. Close tension or speed control between units (where needed) is obtained through shunt-field control of the individual motors by the compensating gate rheostats.



G-E electric drives permit compact arrangement of textile finishing range equipment.

GENERAL ELECTRIC

661-28

DRIVE SYSTEMS FOR TEXTILE MILLS

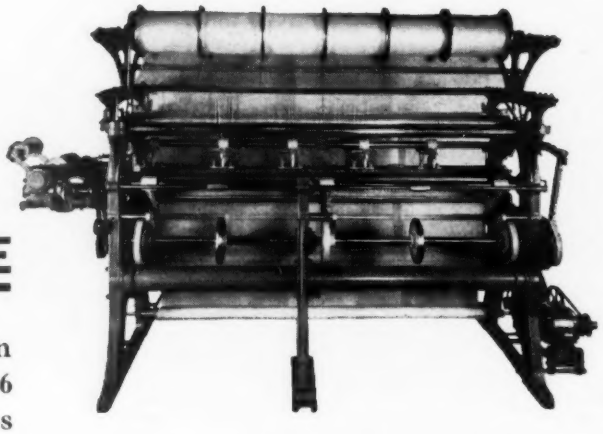
ARE YOU MAKING—

DISH CLOTH MATERIALS?

THIS MACHINE GIVES PRODUCTION SPEEDS NEVER POSSIBLE BEFORE

When you use the *Kidde* Knitter, you can knit 6 strips of dish cloth material, each 16 inches wide, at speeds of 180 to 200 courses per minute. That corresponds to 18 to 24 inches per strip per minute—*a total of 12 feet of material a minute!*

That's a substantially higher rate of production than has ever been possible before—but it's *typical* of the high, *sustained* speeds possible with the *Kidde* Knitter. A new drum drive, a new motion on needle bars make these speeds possible—and the machine is designed throughout to withstand them.



You'll find the *Kidde* Knitter adaptable to practically any type of yarn, thread or elastic—quickly and easily set up for simple or intricate patterns.

Use the *Kidde* Knitter on these materials too

ELASTIC FABRICS for corsets, girdles, brassieres. DRESS FABRICS. VEILINGS and NETTINGS. CURTAINS. NARROW FABRICS: edgings, braidings, laces. SHOE CLOTH. KNITTED OUTERWEAR FABRICS for sweaters, polo shirts.

Write for free literature on the Kidde Knitter—or, better still, see for yourself what it can do. A machine is in operation at our Bloomfield plant—write for an appointment for a demonstration.

The word "Kidde" is the trade-mark of Walter Kidde & Company Inc., and its affiliated companies.

KIDDE MANUFACTURING CO., INC. • BLOOMFIELD, NEW JERSEY

estron

—— *a new name in the language of textiles*

The textile industry has long recognized the need for definite action to clear up the trade and consumer confusion which has resulted from calling by the same name — RAYON — two such different fibers as *regenerated cellulose* and *cellulose acetate*.

Such action has now been taken by the Committee on Textiles of the American Society for Testing Materials, the membership of which includes leading manufacturers, distributors, and users of textile products.

Under the definitions recommended by the ASTM Committee, the word RAYON is confined to man-made fibers composed of *regenerated cellulose*, such as those produced by the viscose process.

For the *cellulose ester* fibers, such as cellulose acetate, the ASTM Committee proposes the adoption of the new generic name ESTRON.

Tennessee Eastman is wholly in accord with the ASTM recommendation that these two major types of man-made fibers bear different names, and believes that the specific terminology recommended by ASTM should be put into practice.

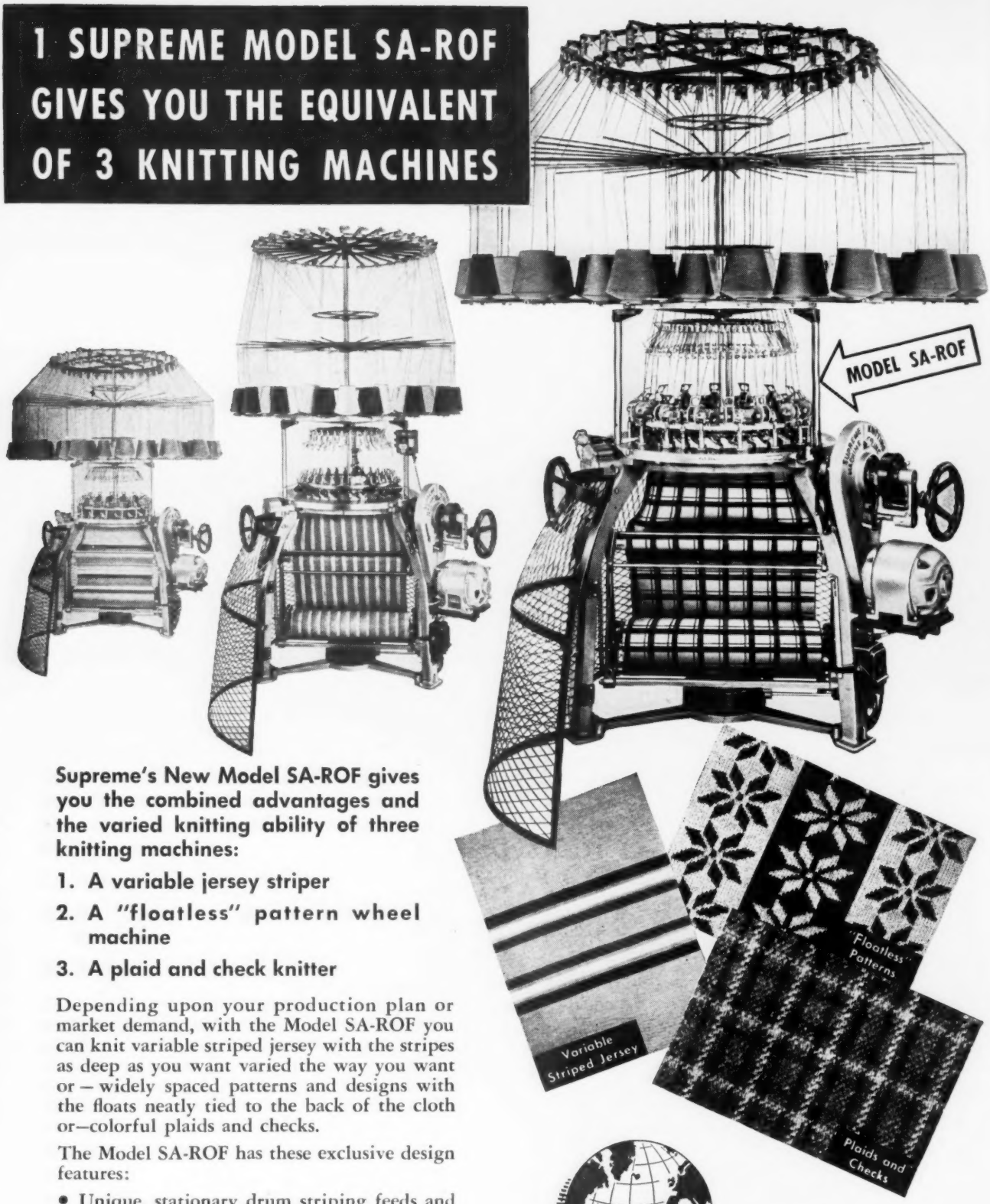
Accordingly, Tennessee Eastman will in the future employ the term ESTRON in labeling and advertising its cellulose acetate textile fibers.

Tennessee Eastman Corporation

SUBSIDIARY OF EASTMAN KODAK COMPANY

KINGSPORT · TENNESSEE

1 SUPREME MODEL SA-ROF GIVES YOU THE EQUIVALENT OF 3 KNITTING MACHINES



Supreme's New Model SA-ROF gives you the combined advantages and the varied knitting ability of three knitting machines:

1. **A variable jersey striper**
2. **A "floatless" pattern wheel machine**
3. **A plaid and check knitter**

Depending upon your production plan or market demand, with the Model SA-ROF you can knit variable striped jersey with the stripes as deep as you want varied the way you want or – widely spaced patterns and designs with the floats neatly tied to the back of the cloth or–colorful plaids and checks.

The Model SA-ROF has these exclusive design features:

- Unique, stationary drum striping feeds and stationary yarn stand.
- Revolving cylinder and take-up.
- 24" diameter, 32 feeds. A minimum of 16 feeds knitting four colors.
- Choice of stripes, patterns or plaids.
- Quiet, concealed camming.

If you want to know more about the unusual fabrics and wider production range possible with SA-ROF, write for your copy of our new booklet, "Variable Stripes and Plaids Pay."

Mills Throughout the World Knit With Supremes

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KNITTING MACHINE CO., INC.

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DOUBLE-HEAD INTERSECTING

QUAD DELIVERY

Pin Drafter

TRADE MARK

THE first Pin Drafter recently introduced by Warner & Swasey was the Dual Delivery machine. It brought to the textile industry a major improvement. On straight wools, wool and synthetic and synthetic cut staples, it is showing big savings, while delivering better quality sliver.

Now a Quad Delivery Pin Drafter is being made available. With equivalent entering weight per delivery, the Quad doubles the production of the Dual Delivery Machine. Entering weight of sliver is approximately 400 grains per yard per delivery. Taking can sliver, Bradford or French comb, it offers remarkable savings by increasing production, reducing doublings and delivering sliver that is more uniform and stronger.

We urge you to investigate the Warner & Swasey Pin Drafter, both Dual and Quad Delivery models. Arrangement can be made for demonstration on your stock. These Warner & Swasey Pin Drafters are precision machines, compactly designed to conserve floor space and can fit into your production lines without major changes.

For Descriptive Booklet, Mail This Coupon Today

WARNER & SWASEY
Cleveland
TEXTILE MACHINERY DIVISION

The Warner & Swasey Company
Textile Machinery Division, 5701 Carnegie Avenue
Cleveland 3, Ohio

Yes, I would appreciate additional information about the Warner & Swasey Quad Delivery Pin Drafter.

Name ..... *Title* .....

Company .....

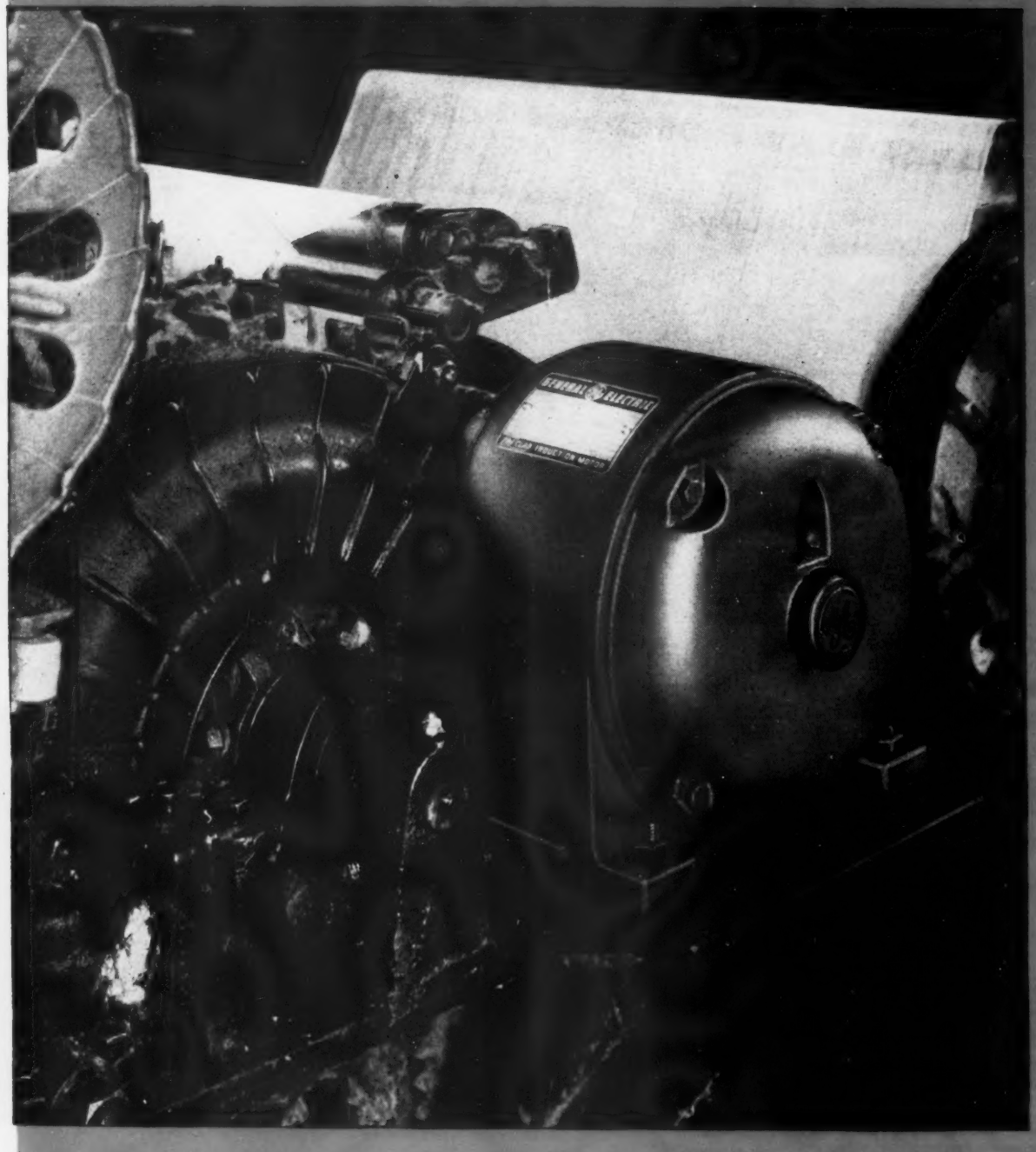
Address .....

City ..... *Zone* .... *State* .....

D-948

You can do it better, faster, for less . . . with a Warner & Swasey

built the way a



GENERAL ELECTRIC

loom likes it!

...that's why the new GE loom motor increases output – costs less to maintain

The new G-E loom motor is backed by one of the most comprehensive development programs ever undertaken for a motor of this type. Loom design factors like weight of lay, travel of lay, picks per minute, weight of shuttle, etc., were carefully studied so that the electrical and mechanical characteristics of the new motor would meet the exacting demands of loom service. The result is a motor "built the way a loom likes it". In your mill it will produce these two important advantages:

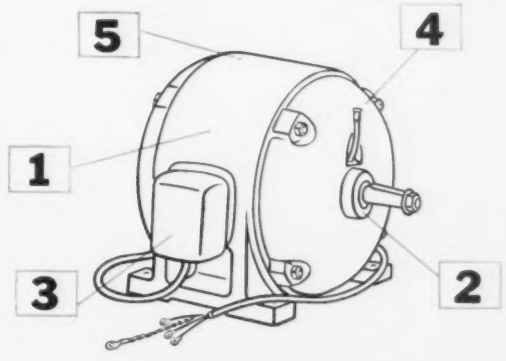
INCREASE YOUR PRODUCTION!

This new motor maintains a high sustained speed throughout the pick cycle. This contributes to maximum production from looms. Moreover, the rugged construction means little time out for repairs.

CUT YOUR MAINTENANCE COSTS!

The totally-enclosed cast-iron construction of this motor—plus new-type steel-backed bronze bearings enables it to withstand the rigors of loom service. Accessible oilers on large capacity bearing reservoirs simplify lubrication.

The new G-E loom motor (40° C rise) is now available in ¾, 1, 1½, and 2 horsepower ratings. Mail the coupon today for Bulletin GEA-5011 which gives detailed analysis of the motor, frame dimensions, etc. *Apparatus Department, General Electric Company, Schenectady 5, N. Y.*



THESE FEATURES MAKE G-E LOOM MOTORS A REAL BUY!

1. A rugged, totally enclosed, cast-iron frame which is shorter, takes up less aisle space.
2. Larger diameter, wool packed, steel-backed bronze bearing linings for greater capacity and longer life.
3. Roomy, two-piece conduit box will accommodate either S. O. cord, or conduit system (when suitable fittings are used). Motor furnished with 4 feet of 4-conduit Flamenol* cable.
4. A pinion-end bearing that's easier to lubricate.
5. All ratings with a single diameter frame to make it easy to change ratings as production demands vary.

TOTALLY ENCLOSED

LOOM MOTORS

Lint-free and cast-iron!

*Reg. U.S. Pat. Off.

General Electric Company, Section A661-32
Apparatus Department, Schenectady 5, N. Y.

Please send without obligation a copy of your Bulletin GEA-5011 which describes the new G-E totally-enclosed 40° C rise loom motor.

Name _____

Address _____

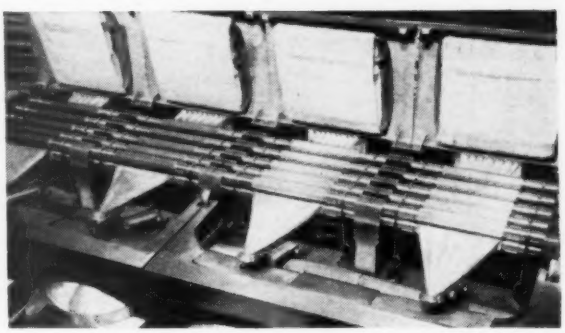
City _____ State _____

Medley Drawing Produces a More Uniform Sliver!

—and every good mill superintendent knows that good yarn cannot be made from bad sliver. They know that more production headaches originate from poor drawing than any other department.

For this reason, Medley has made a specialty of improving the drawing process in textile manufacture. Out of this study has come the now famous Medley "8 Ends Up" and an improved standard 6 ends up drawing, with the Medley Metallic Drawing rolls adjustable to draw any fiber in staple lengths from five-eighths inch to thirteen inches. The top rolls have sealed-in ball-bearings with permanently sealed in lubrication. This feature eliminates grease spotting and reduces sliver variation to an absolute minimum.

If you are expecting maximum production of top quality yarn from your mill, then you owe it to yourself and those in charge of your production to check on Medley Drawing. A call, a card or a wire will get



you the help of a qualified engineer in answering your particular problems.

Ask how your present Drawing Frames can be changed over to the more efficient Medley "8 Ends Up" or conventional 6 ends up drawing. Reduce "ends down" . . . step up production.

The MEDLEY System, Inc.
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Medley Manufacturing Co., Columbus, Ga. • Gastonia Roller, Flyer & Spindle Co., Gastonia, N. C. • Allan Textile Machine Co., Pawtucket, R. I.

THEN, AS NOW, **COLOR** SOLD TEXTILES

When, in 1662, Louis XIV consolidated the various Paris work shops into the Royal Gobelin Manufactory, French tapestry entered its grandiose era. In this, as in all else, Europe strove to imitate the "Sun King." The subtle blendings of color in these luxurious woven hangings made them the hallmark of nobility. Then, as now, color sold textiles.

Franklin Process

LARGEST PACKAGE DYERS IN THE WORLD

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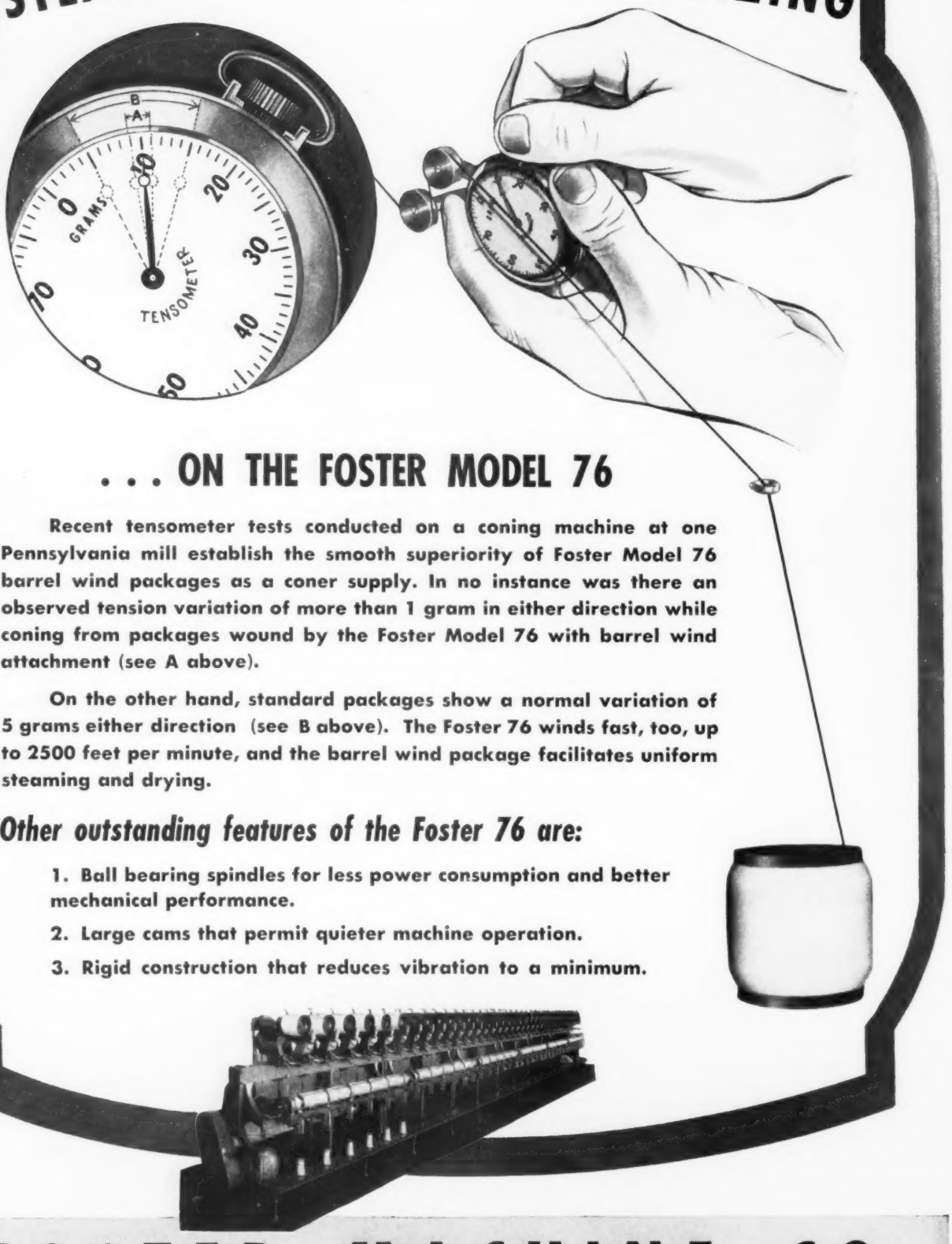
STEADY TENSION – SMOOTH SIZING



. . . ON THE FOSTER MODEL 76

Recent tensometer tests conducted on a coning machine at one Pennsylvania mill establish the smooth superiority of Foster Model 76 barrel wind packages as a coner supply. In no instance was there an observed tension variation of more than 1 gram in either direction while coning from packages wound by the Foster Model 76 with barrel wind attachment (see A above).

On the other hand, standard packages show a normal variation of 5 grams either direction (see B above). The Foster 76 winds fast, too, up to 2500 feet per minute, and the barrel wind package facilitates uniform steaming and drying.

Other outstanding features of the Foster 76 are:

1. **Ball bearing spindles for less power consumption and better mechanical performance.**
2. **Large cams that permit quieter machine operation.**
3. **Rigid construction that reduces vibration to a minimum.**

FOSTER MACHINE CO.

WESTFIELD, MASSACHUSETTS

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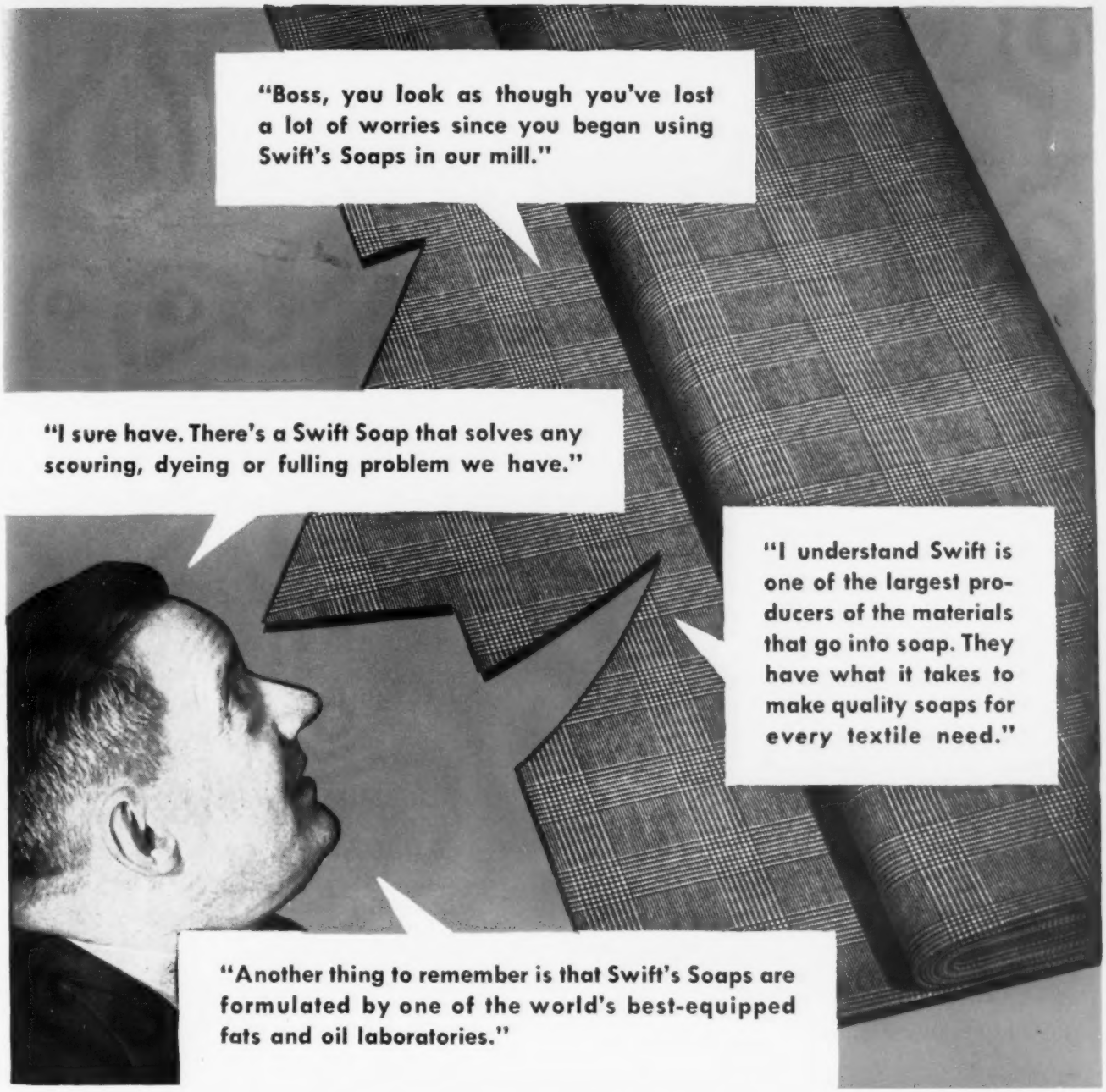
"Boss, you look as though you've lost a lot of worries since you began using Swift's Soaps in our mill."
"I sure have. There's a Swift Soap that solves any scouring, dyeing or fulling problem we have."
"I understand Swift is one of the largest producers of the materials that go into soap. They have what it takes to make quality soaps for every textile need."
"Another thing to remember is that Swift's Soaps are formulated by one of the world's best-equipped fats and oil laboratories."

There's a Swift Distribution Point near you

Swift's Soaps
for every textile use

Vertex Flakes
557 Flakes
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In barrels and bags

SWIFT & COMPANY
Soap Department, Chicago 9, Ill.

Texrope Vari-Pitch Give More Output

Quick Change in Speed Reduces Downtime, Increases Productive Time

TEXROPE VARI-PITCH DRIVE provides quick changes in machine speed without changing sheaves. With Motion Control *Vari-Pitch* sheaves, infinite variations in speed within a wide range are available instantly, *without stopping the machine.* With Stationary Control *Vari-Pitch* sheaves, the change requires only 5 to 8 minutes. Machine downtime and unproductive labor time are greatly reduced. You can make speed adjustments easily and quickly, squeezing the last possible per cent of efficiency from your machines.

EXACT SPEED CONTROL, WIDE ADJUSTMENT

Vari-Pitch sheaves provide for infinite speed variations within their range. Machines can be operated at precisely the required or rated speed for maximum efficiency. Installing a single *Texrope Vari-Pitch* sheave will provide speed variations up to 25 per cent, using standard V-belts. Wide range *Vari-Pitch* sheaves and Q or R belts provide variations up to 100 per cent. *Texrope* enclosed *Vari-Pitch* speed changers allow speed changes up to 375 per cent.

ALLIS-CHALMERS OFFERS COMPLETE SERVICE

Full range of *Texrope Super-7* V-belts — standard, *Vari-Pitch* and easy-mounting *Magic Grip* sheaves— improved *Quick Clean,* loom and standard squirrel cage motors, efficient dry-type distribution transformers — motor control. Buy all of this equipment from one dependable source — backed by undivided responsibility for correctly engineered application and performance. Conveniently located Allis-Chalmers District Offices and Authorized Dealers offer you prompt, efficient attention. Call the one nearest you or write ALLIS-CHALMERS, MILWAUKEE 1, WIS.

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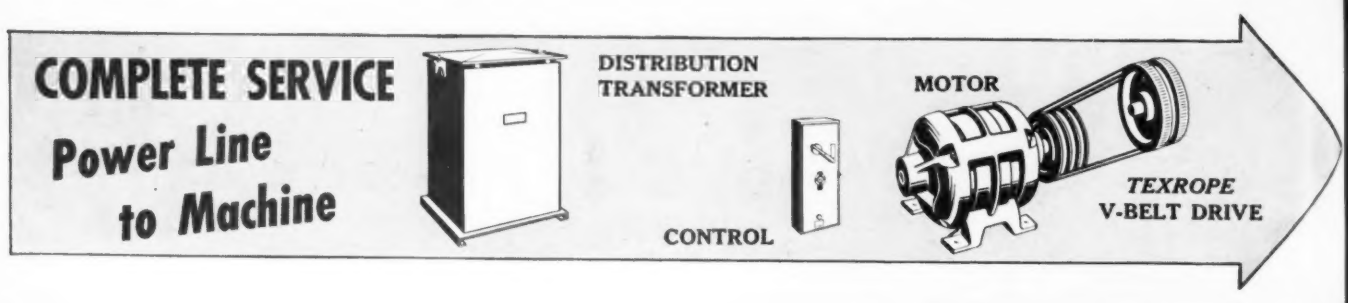

Drives

TYPICAL A-C TEXTILE DRIVES

Wide Range *Vari-Pitch* sheaves with Stationary Control are used on these spinning frames in a North Carolina textile plant. In addition to the *Vari-Pitch* Drives, this installation includes new type 10 HP *Quick Clean* Motors, *Texrope* V-belts and motor control. Be sure you get the advantages of coordinated equipment, engineered installation, undivided responsibility. Standardize on Allis-Chalmers for *everything* between power line and machine.

ALLIS-CHALMERS

Originators of the Multiple V-belt Drive for the Textile Industry

TUFFER HAND CARDS

mean greater stripping efficiency

TUFFER Hand Cards mean faster, easier stripping...less effort and less arm strain. Their firm, yet flexible teeth strip smoothly and evenly . . . clean your rolls quickly.

Whether you use Midgley's Improved or Howard's Special, you're using the best when you use TUFFER Hand Cards.

Ask your nearest Howard Bros. representative for complete information.

Midgley's Improved Hand Stripping Card—Indestructible backs and handles . . . Steel clamps protect edges of the card and hold them securely to the back.

Howard's Special Hand Stripping Card—Ruggedly constructed...pressed-steel handle . . . made of three-ply indestructible wood for strength and light weight.

HOWARD BROS. MFG. CO.
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Southern Plants: Atlanta, Ga., and Gastonia, N. C.
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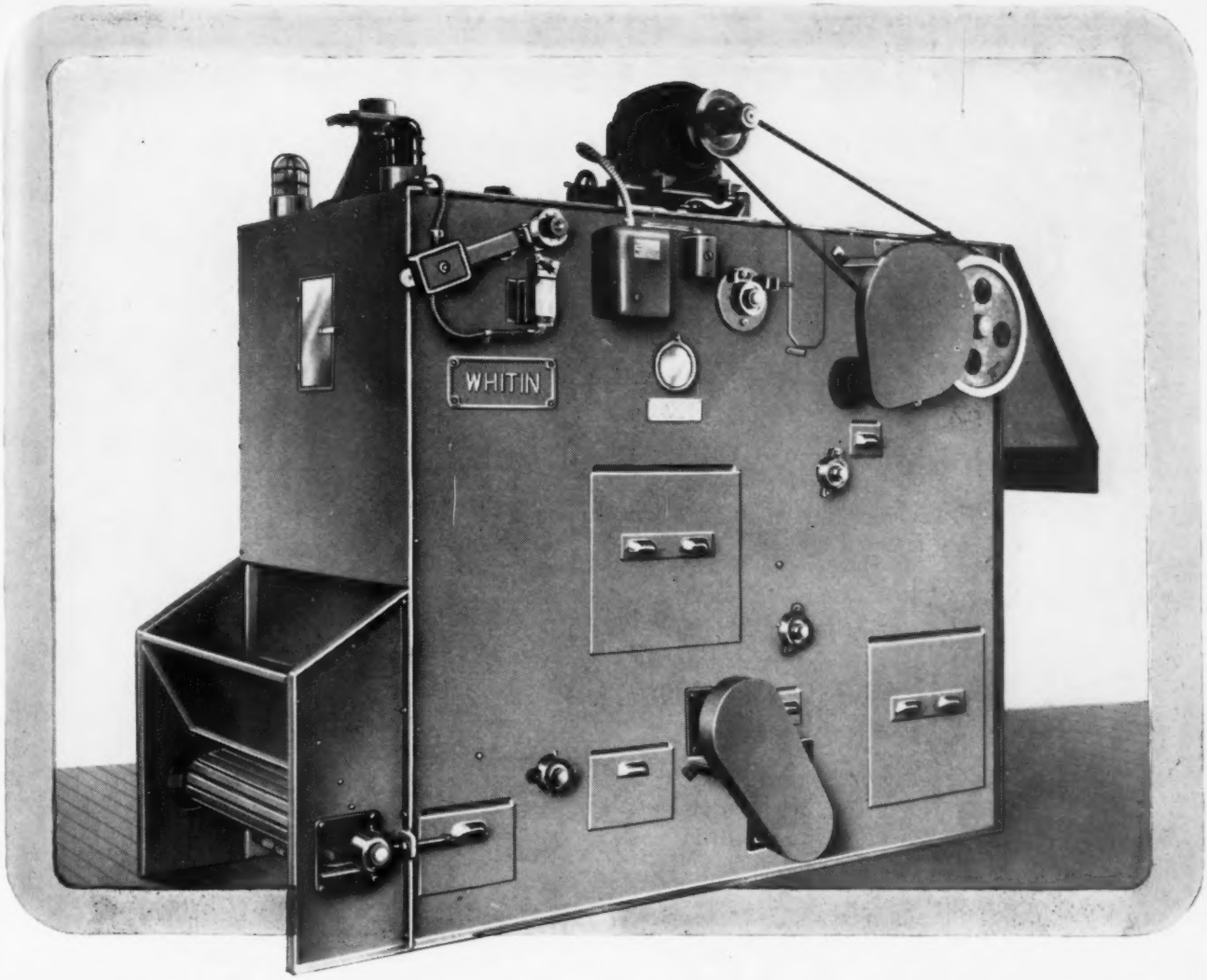
TUFFER CARD CLOTHING — ***IMPROVES PRODUCTION ALL ALONG THE LINE***



WHITIN *takes another* STEP FORWARD

Two New Blending Feeder Models Now in Production

In support of Whitin's announced policy of Progress Through Improvement we can now report the development and production of two new blending feeders — the Model "N2" for blending and feeding baled cotton and the Model "N3" for synthetic fibers, wool, cotton wastes and card strips.

One of the most noteworthy improvements is the permanently synchronized relative speeds of all moving members. Speeds are easily controlled by the vari-speed "V" belt drive. Changes of settings for different grades of stock are greatly simplified.

The proper relative speeds of the bottom apron, pin apron, pin cylinder or Sargent comb, and pin apron doffer, have all been properly selected after exhaustive tests to give the maximum efficiency in blending, dusting, cleaning, and the size of the delivered tufts of stock.

To increase or decrease the size of the tufts of delivered stock the pin cylinder or Sargent comb may be set at the proper distance from the pin apron. If a change in production is desired without changing the size of the stock tufts, the whole machine speed is controlled by turning a handwheel on the base of the motor.

Other new features which add to the efficiency of these machines are the redesigned apron with closer spacing slats, and the inclined bottom apron. All shafts run in self-aligning ball bearings and signal lights, dust fan and sprinkler domes are standard equipment.

Whitin MACHINE WORKS

WHITINSVILLE, MASSACHUSETTS
CHARLOTTE, N. C. • ATLANTA, GA.

GONIC agrees . . .

TLBT Kettle
at Gonic Mfg. Co.

Greatest Dye Kettle Advancement in 15 years!

FINISHING EQUIPMENT
Cloth Washers, Batch and continuous • Fulling Mills • Piece Dye Kettles • Dye Becks Rope Soapers • Cloth Carbonizing Ranges Soaping Machines and Soap Distributing Systems • Derby Continuout Dry Cleaners Tenter Dryers • Stock Dye Kettles • Rolls Multi-Lap Continuous Process Machines Top Dyeing Machines Squeeze Roll Extractors • Crushers Reels • Parts

At Gonic Mfg. Co., Gonic, N. H., or wherever the TLBT Kettle is at work these key facts make it outstanding:

1. It's a universal kettle! It has proved successful in dyeing operations ranging from 5 oz. flannels to 32 oz. meltons, from worsted shirtings through gabardines, from heavy men's wear and knitted shoe linings to heavy knitted ski cloth.
2. Wherever the TLBT Kettle has operated there have been practically no tangles or tie-ups thanks in part to unique design and in part to a large drum type multi-grip reel with partially knurled surface. (pat. pend.)
3. Goods balloon, move around, change folds more readily eliminating wrinkles, creases and dye streaks.
4. There is no slippage even on rayon gabardines.
5. The ratio of dye liquor per lb. of cloth in the kettle is so near perfect that substantial dyestuff savings result.

Ask now for the Type TLBT Stainless Piece Dye Kettle catalog sheet and complete details.

RIGGS and LOMBARD Inc.
FOOT OF SUFFOLK STREET, LOWELL, MASS.

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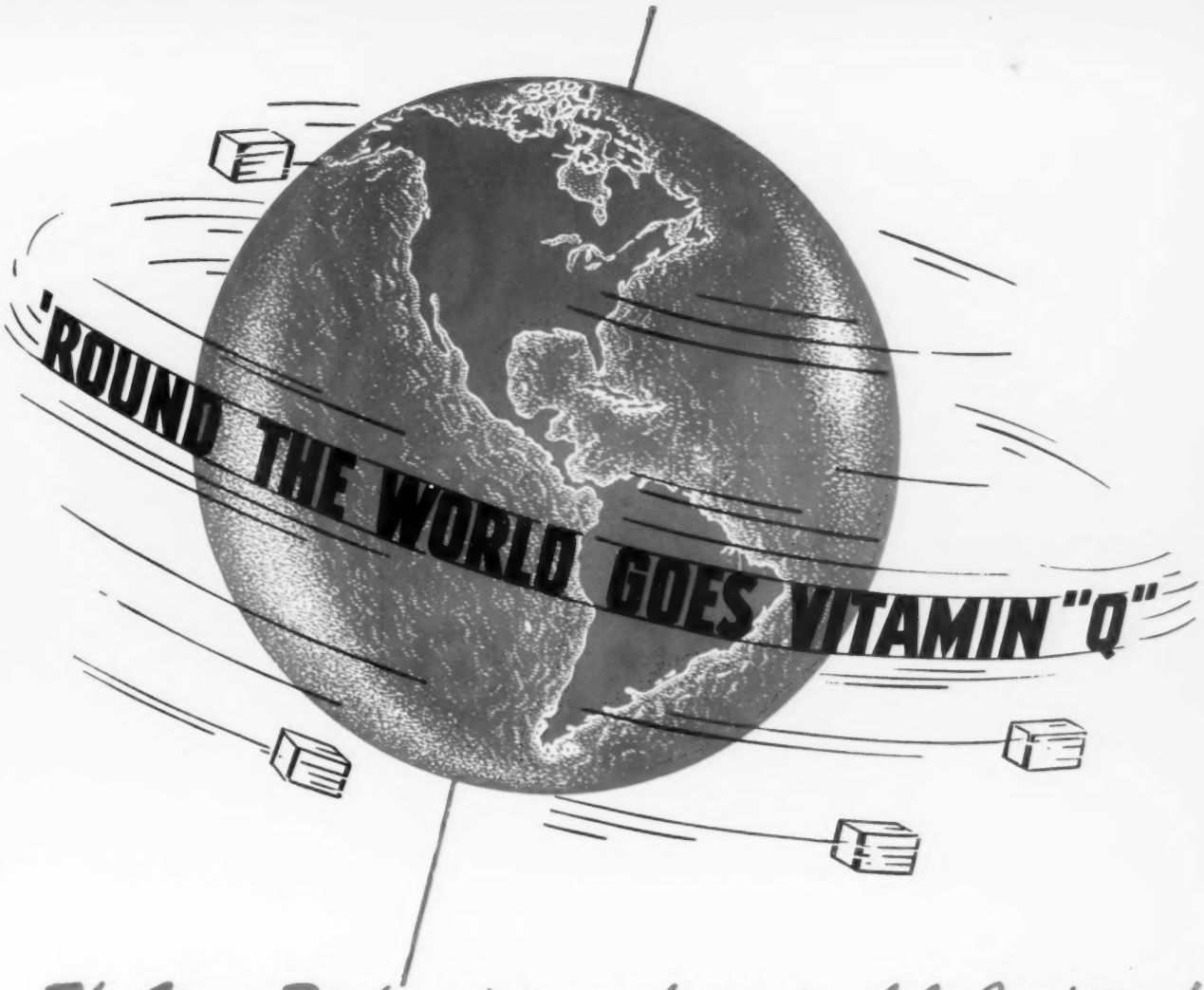
The Fleet Line
OF FINISHING EQUIPMENT



The Yarn Packaged to reach you in A-1 Condition!

The Quality of Boger and Crawford knitting yarn is guaranteed — the highest tribute we can pay it. Signed . . . . .

Frederick Boger

We emphasize packing because of the importance of yarn reaching you in perfect condition at the time you want it! Boger and Crawford Vitamin "Q" yarn is individually wrapped with a protective covering of paper, then it is inserted carefully in uniform rows in *sturdy wood* boxes, strong and durable enough to be shipped all over the world. Indeed, it *is* supplied to textile mills practically everywhere.

This packing *assures* you that your order of Boger and Crawford yarn will come intact—necessitating *no* delay by having to re-order. From Boger and Crawford—to you; sure and quick!

Specify Boger and Crawford Vitamin "Q" yarn for Quality products.

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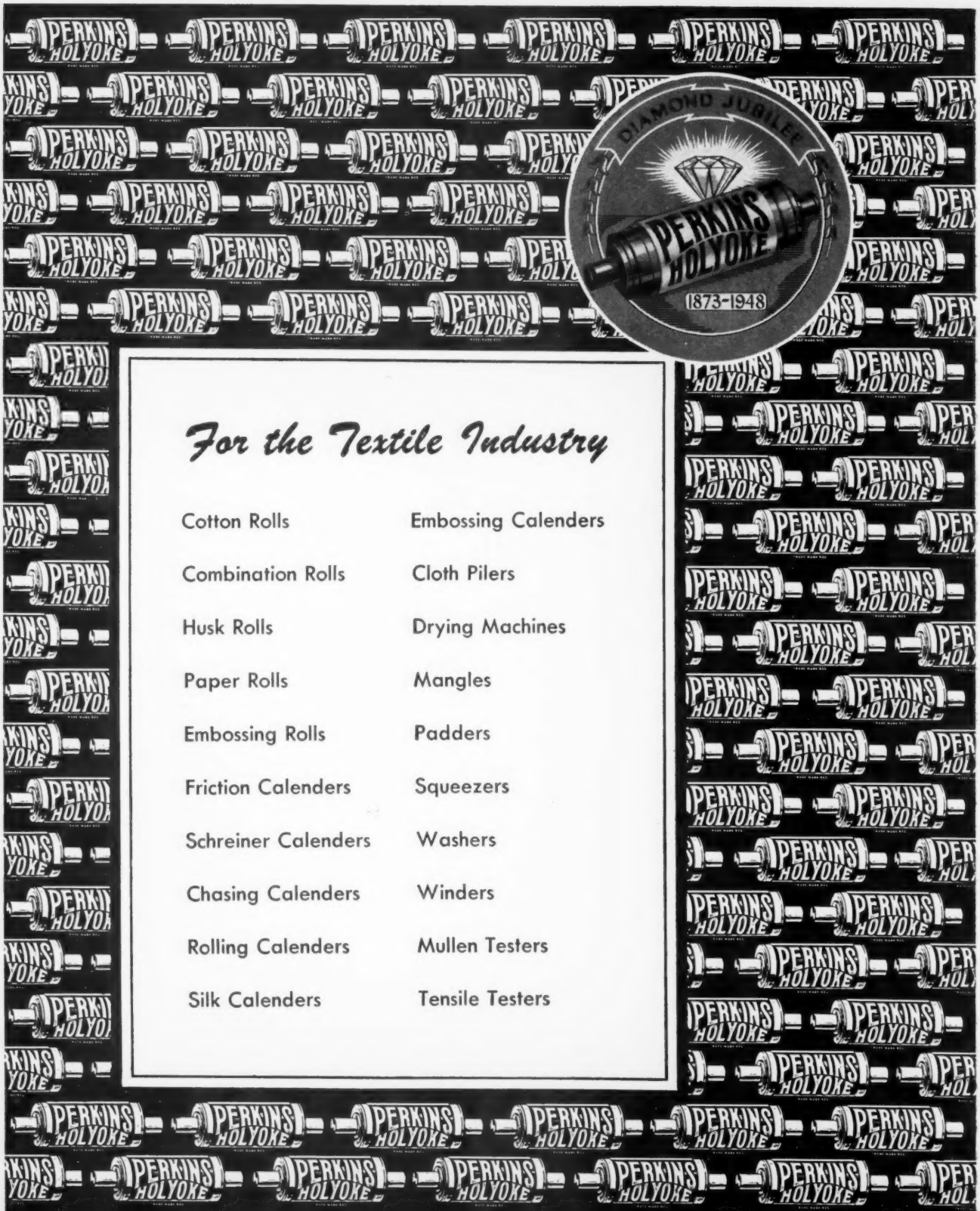

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There is a "W. & G." Machine best suited for your particular requirements.

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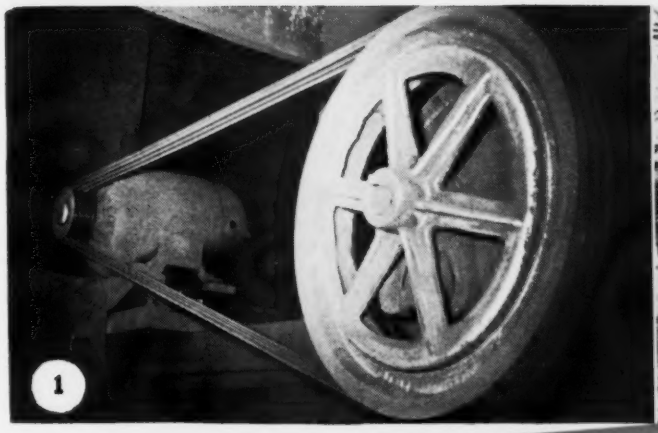


For Any Atmospheric Hazard There's a CENTURY MOTOR— Properly Protected—To Assure Continuous Performance

To protect motors against the hazards of abnormal atmospheres, Century provides Totally Enclosed Fan Cooled and Explosion Proof frames, also Splash Proof.

These are in addition to open type frames on which the upper half of the frame is protected against falling or dripping particles.

Whatever your requirements there's a Century motor designed to accurately meet the needs of your equipment.

The illustrations here are typical of the variety of applications which are successfully powered by Century motors.

1 — Century 7½ horsepower *totally enclosed fan cooled* motor drives an elevator leg in a dusty, dirty atmosphere.

2 — Century 5 horsepower *explosion proof* motor provides protection against explosions at a gasoline storage plant.

3 — Three horsepower Century *splash proof* motors provide protection from splashing water as well as from all kinds of weather conditions on a railroad car-washing unit.

4 — Century 100 horsepower *general purpose* motors are used to drive air compressors in clean surroundings.

Century builds a complete line of fractional and integral horsepower electric motors in sizes from 1/6 to 400 horsepower to meet the requirements of industrial production, commercial and appliance needs.

Specify Century for all your electric power requirements.

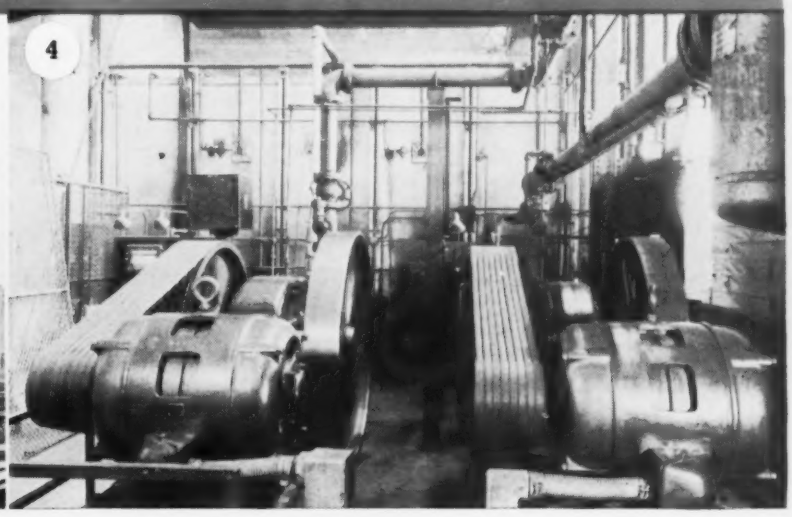
CENTURY ELECTRIC COMPANY

1806 Pine Street, St. Louis 3, Missouri

Offices and Stock Points in Principal Cities

Century C MOTORS

CE592



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The IOI FORMULA for processing equipment that increases production, cuts costs in the textile industry

Fabric Coaters and Systems

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In every part of the world where men are concerned with continuous materials processing and oven treating, IOI installations are increasing production and cutting costs today.

If you have a problem in this field, IOI's sound engineering experience and knowledge may help you find the right solution.

You have only to let us know what your problem is. We'll be glad to send you helpful information developed in solving similar problems—or we'll send an IOI engineer to talk the matter over with you, if you prefer. No obligation in either case.

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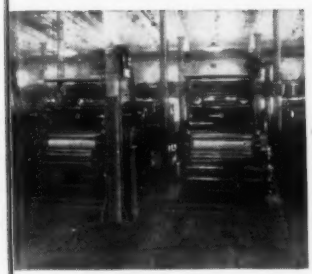
Quality machinery for the textile industry has been the achievement of H & B for more than 50 years. By careful planning from the beginning, in engineering, materials and production, we have continually built machinery for each specific job in each individual mill. Attention to detail, to the LITTLE things, has truly made a BIG difference.

H&B AMERICAN

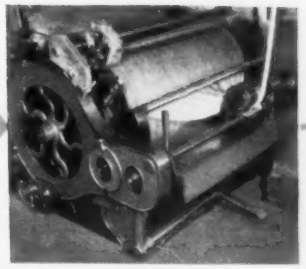
Builders of Modern

FACTORY, EXECUTIVE OFFICES AND EXPORT

TEXTILE MACHINERY

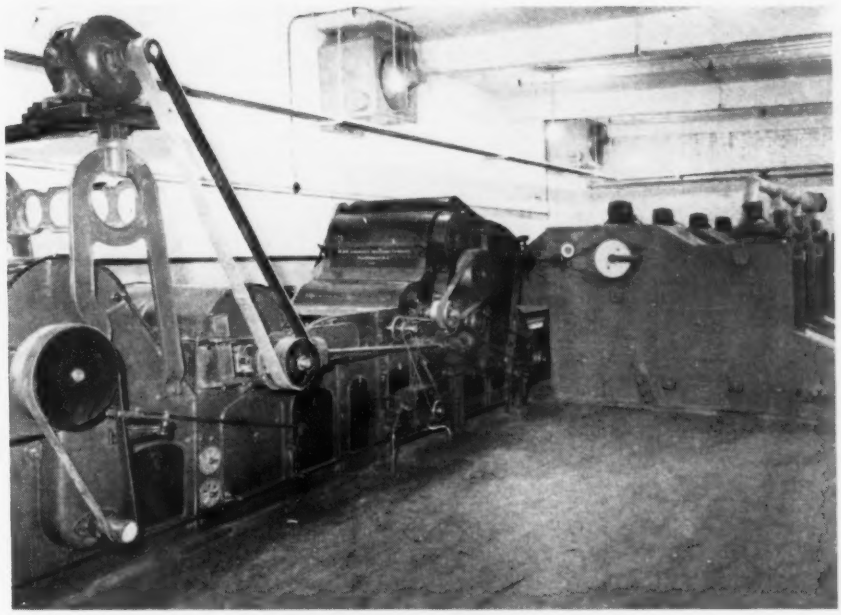


PICKERS

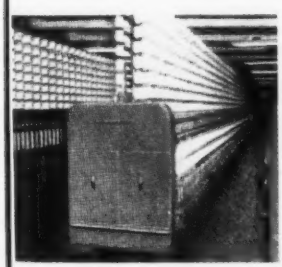


CARDS

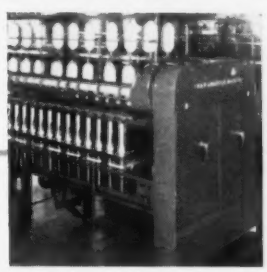
DRAWING FRAMES



OPENING EQUIPMENT



TWISTERS



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MACHINE CO.

Textile Machinery

DIVISION **PAWTUCKET, RHODE ISLAND, U. S. A.**

BRANCH OFFICES
ATLANTA, GA.
815 CITIZENS AND SOUTHERN NATIONAL BANK BUILDING
CHARLOTTE, N. C.
1201 JOHNSTON BUILDING

UNION PACIFIC

The Governor of Kansas *invites You*

STATE OF KANSAS
OFFICE OF THE GOVERNOR
TOPEKA

FRANK CARLSON
GOVERNOR

To American Industry:

Kansas has matchless and abundant resources which await only the magic touch of industry to spread their benefits to the world. Its rich soil produces the essential foodstuffs of life. Beneath the surface is stored in abundance cheap energy to turn the wheels of industry. The possibilities of rich reward are limitless.

The facilities of the State, including the active and aggressive Industrial Development Commission, are pledged to offer every encouragement and assistance in working out the problems of new industries seeking to process and distribute the great natural resources of Kansas, which furnish fertile and almost virgin soil for aggressive modern development. A thorough investigation is always welcomed. Modern transportation permits products of Kansas industry to radiate cheaply to all parts of the country.

Sincerely,

Frank Carlson
Governor

Frank Carlson

* One of a series of advertisements based on industrial opportunities in the states served by Union Pacific Railroad.

Unite with Union Pacific in selecting sites and seeking new markets in California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, Oregon, Utah, Washington, Wyoming.

*Address Industrial Department, Union Pacific Railroad
Omaha 2, Nebraska

UNION PACIFIC RAILROAD

Road of the Daily Streamliners

SARAN

BY NATIONAL

Weaving luxurious beauty and unmatched durability into an exciting array of versatile fabrics, saran provides the ultimate in upholstery materials. This *basically different* textile material resists dirt, stains, abrasion and hard wear — stays everlastingly new with only a little care. And saran's decorator colors are molded right into monofilaments as fine as .005" — clean, lint-free, easy to work and to weave.

For new achievements in fabric beauty and performance, it pays to rely on saran!

★ *Be sure to visit us — Booth 249 — Southern Textile Exposition, Greenville, S. C. — Oct. 4-9.*

REG. U.S. PAT. OFF.

Saran by National

ODENTON, MARYLAND

New York: Empire State Building • Los Angeles: Bankers Building

SARAN

SARAN BY NATIONAL *denotes monofilament, rattan and tape manufactured by The National Plastic Products Company from Dow's saran, and supplied to mills, weavers and other fabricators.*

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK 16, N. Y.

Telephone: Murray Hill 3-8650

FACTORS

For Manufacturers and Merchants

Inquiries as to our services solicited

●

ESTABLISHED 1840

When you need to be sure

Far-seeing men, traveling over rough terrain, always choose a sure-footed pack animal. It's the best bet on steep and narrow trails where there's only a narrow margin between safety and trouble.

In de-sizing operations, *when you need to be sure*, select Diastafor brand de-sizing agent—Type L. It gives you a *wider* margin of safety.

Diastafor's workability in wide ranges of temperature and pH makes your finishing operations easier, and helps keep "problem lots" at a minimum. You can always depend on "good going" when you use Diastafor—Type L.

Whether you are working with cottons, rayons, or mixed goods, Diastafor—Type L will give you excellent finish. You'll find it will give the uniformly good results you want even in a continuous de-sizing operation.

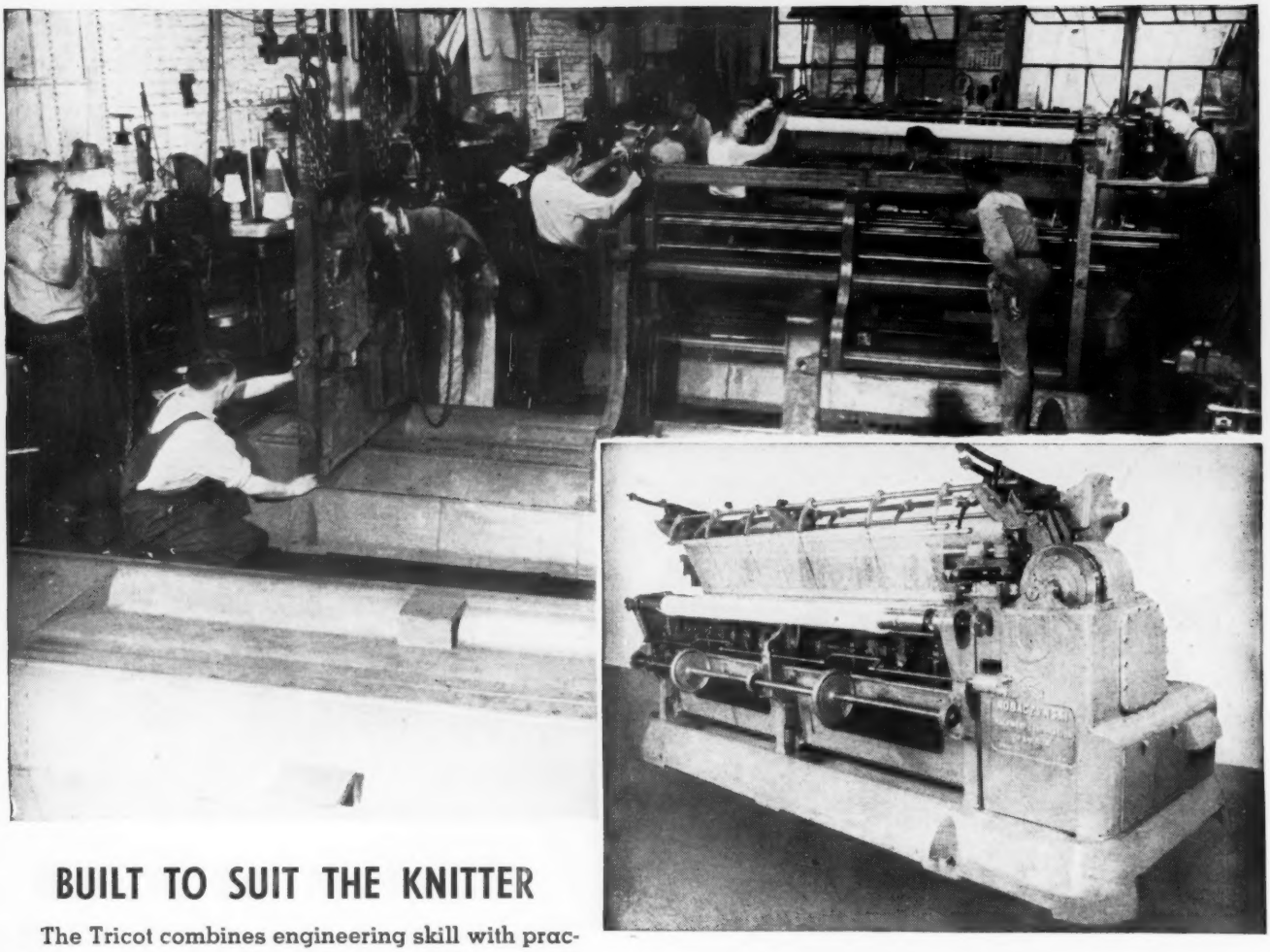
Next time you're faced with a tough de-sizing job, why not give Diastafor a trial? The combination of good performance, ease of use and economy has made Diastafor the leader for 40 years. We believe it will be the favorite in your mill, too.

Our sales and technical staffs will be glad to furnish complete information and prices. Write Standard Brands Incorporated, *Diastafor Department*, 595 Madison Avenue, New York 22, New York.

DIASTAFOR

A TRADE MARK OF STANDARD BRANDS INCORPORATED

ROBACZYNSKI TRICOT
Designed to produce better fabric faster

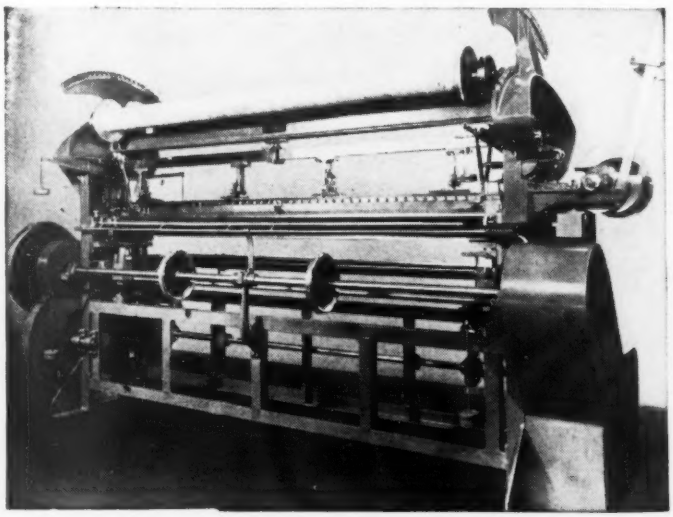


BUILT TO SUIT THE KNITTER

The Tricot combines engineering skill with practical experience. Unusual accessibility of all parts. Massive foundation base makes its high speed possible. Correct height for the operator with indicators for adjustments from the front of the machine. Cruising speed 450 courses per minute.

The Raschel is a simple, smooth running machine that knits a wide variety of designs and colors. It handles any yarn from 10 denier up at speeds to 250 courses per minute.

RASCHEL TYPE WARP KNITTER



ROBACZYNSKI MACHINE CORPORATION

340 TEN EYCK ST., BROOKLYN 6, N. Y.

Manufacturers of

Tricot Machines—Raschel Warp Knitters—V type Flat Knitting Machines—Purl stitch or Link & Link Machines—Border Machines—Tubular Trim Knitting Machines—Circular String & Belt Machines—Complete Information on Request.

General Sales Agents

ERICK-GROSS CORPORATION

64-72 West Broad St., Bergenfield, New Jersey, U. S. A.

No Steaming Needed

—in spite of 21 days of rugged winter!

Columbia Caustic Soda Tank Car Unloaded Without Difficulty

On January 28, 1948, a Columbia Caustic Soda tank car left Barberton, Ohio, consigned to a Massachusetts plant. Heavy snow storms side-tracked the car near Buffalo. Transit time for this haul, ordinarily three to four days, stretched out to twenty-one days.

In spite of the long exposure to sub-zero weather, the temperature of the caustic liquor, loaded at 150°F., dropped only to 95°F. None of the liquor had solidified and the car was unloaded easily and completely, without steaming.

Delays of this duration are rare. The incident therefore provides unusual evidence of the highly efficient design and construction of these cars—particularly in respect to insulation—and the rigid inspection and attention given to loading temperatures.

The same care is used in the manufacture and shipping of all Columbia products. Pittsburgh Plate Glass Company, Columbia Chemical Division, Fifth Avenue at Bellefield, Pittsburgh 13, Pennsylvania.

COLUMBIA CHEMICALS

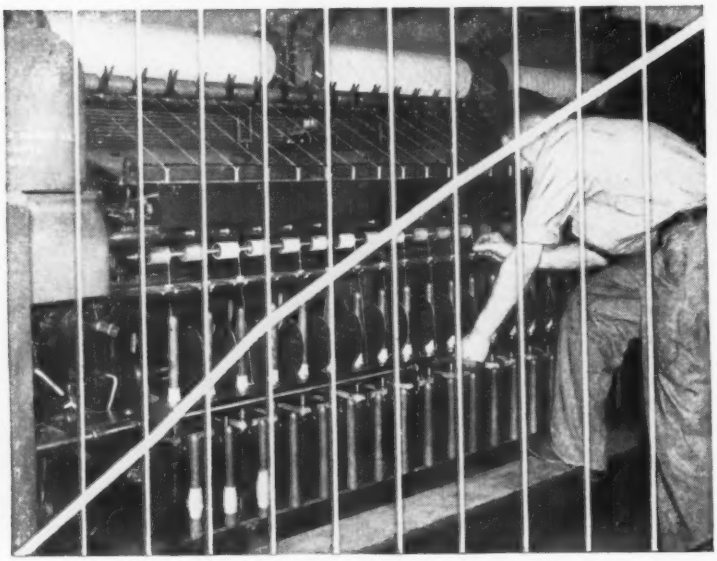
CHICAGO · NEW YORK · BOSTON · CINCINNATI · MINNEAPOLIS · CHARLOTTE · ST. LOUIS · CLEVELAND · PITTSBURGH · PHILADELPHIA · SAN FRANCISCO

PAINT • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

FOR YOUR INFOR M ATION

50 MORE WOOLEN MILLS ADOPT SYTON FOR SPINNING EFFICIENCY



Frame spinning at Lowell Textile Institute.

In woolens *and* worsteds, Monsanto's Syton is standard in more and more mills for better spinning at lower cost. For example:

50 more woolen mills recently adopted Syton in just four months.

46% of all the worsted yarn spun on the Bradford-system now uses Syton.

These mills, *and more every week*, find Syton is basic and best for easier, more economical spinning. Actual mill practice proves how Syton delivers all these advantages:

INCREASED PRODUCTION: Twist can be reduced and production speeded since Syton increases yarn strength.

LOFTIER YARNS: Less twist means loftier yarns with equal or greater tensile strength.

FEWER ENDS DOWN: Syton reduced ends down from 25% to 50%, depending on grade of wool.

IMPROVED SPINNING EFFICIENCY: Syton produces more uniform yarn, with less beard and thin spots, reduced fly waste and better drafting.

FINER YARNS POSSIBLE: Syton-treated yarns can be spun closer to the limit spin.

First with Silica Sols in Textile Spinning

The application of silica sols to any textile fiber as an aid to spinning is covered by U. S. Patent 2,443,512, issued to Monsanto Chemical Company.

Syton is standard and basic in actual mill use . . . *and just as basic in Monsanto research.* Monsanto research originated and successfully developed silica sols to increase the tensile strength of yarns for better spinning.

Typical reports of Mills using SYTON

- **"The record showed that Syton-treated yarns were showing 30% less ends down."**
- **"We get a 20% increase in tensile strength with no twist reduction. Also get a smoother yarn and better weaving."**
- **"This mill is getting a consistent increase in yarn break strength of 25% to 30% with Syton for woolen spinning."**
- **"Results with Syton showed a reduction in ends down of about 30%."**

From Davis S. Furber
"News"
July 1948

"Our representatives have heard so many enthusiastic reports on Syton W20 by millmen who are now using it that we feel this information should be passed on."

Your mill can take advantage of the hundreds of profitable lessons learned with Syton in actual mill practice. *Monsanto can give you complete information plus on-the-spot technical help.* Just check the coupon at K1. K1

PROGRESS REPORT ON RESLOOM C

AUGUST 10

JUNE 30

AUGUST 18

DAILY NEWS RECORD & WOMEN'S WEAR DAILY

Cottons, made wrinkle-resistant by Resloom C, continue to make important news in the textile world.

Testifying to the progress of Resloom C are these three more recent Monsanto announcements of entirely new series of wrinkle-resistant fabrics:

DAN RIVER...

"Dancord" Cord
"Dan Plaid" Shirting
New patterns in "Skytop" Tweed

JOSEPH BANCROFT & SONS...

"Stazenu" Finishes for cottons, including Seersucker
"Everglaze" tile batik print

In addition to the new wrinkle-resistance imparted to these cottons, Resloom C also improves washability, shrinkage control, hand and stability . . . plus special "marketability."

As interest in wrinkle-resistance grows, sales grow, too, for Monsanto's Wrinkle Recovery Meter. This new device for testing and demonstrating this important advantage overcomes many of the variables encountered in former methods. The Monsanto meter measures wrinkle-recovery easily, quickly and accurately at the actual angle of wrinkle-recovery *at the crease.*

If you want a wrinkle-recovery meter for your laboratory plant, mill or office (at cost, $15) or added information check item K2 on the coupon. K2

Find method for "Finger Printing" Resins

Because of the special advantages of melamine resin finishes, e.g. Resloom, in actual use, Monsanto research laboratories use a simple test for determining whether a fabric has been treated with melamine or urea formaldehyde resins. The test is of genuine interest to all who finish or buy fabrics. Monsanto, for example, can test samples of all fabrics being merchandised as finished with Resloom.

This test, first described in American Dyestuff Reporter, consists of immersing a 3-5 gram sample of treated fabric in a solution of 2 grams of concentrated hydrochloric acid in 50 cc. of water and bringing to a boil. After boiling 5 minutes to strip same of the resin, the sample is removed and the solution evaporated. The residue is examined for solubility in Glacial Acetic acid; an insoluble, flaky resin indicates melamine, a hard, gummy, orange-colored residue soluble in acetic indicates urea formaldehyde.

Syton, Resloom: Reg. U. S. Pat. Off.

MONSANTO
CHEMICALS — PLASTICS

SERVING INDUSTRY...WHICH SERVES MANKIND

MONSANTO CHEMICAL COMPANY, TEXTILE CHEMICALS DEPT.
Desk TWT9, 140 Federal Street, Boston 10, Mass.

Please send me information on K1..... K2.....

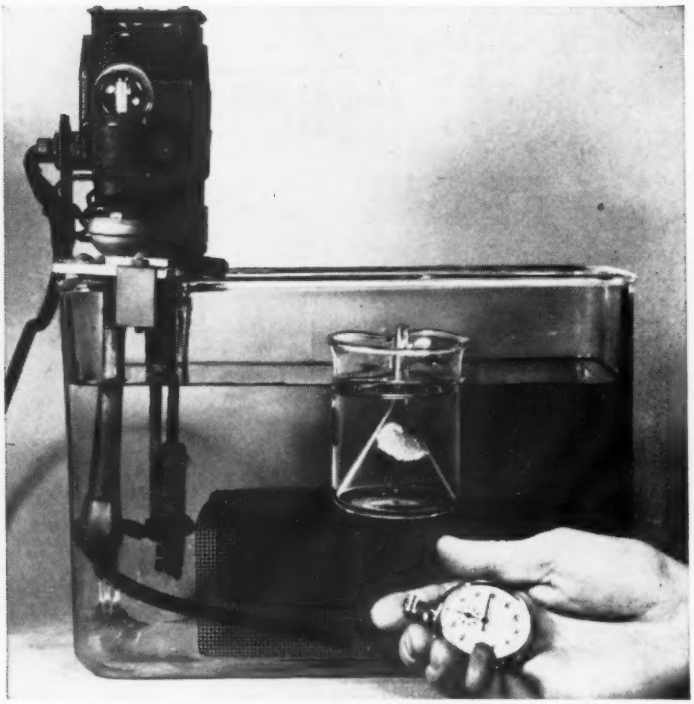
Name _____ Title _____

Company _____

Address _____

City _____ State _____

Wyandotte Kreelon



Wetting test showing a canvas disc sinking through a Kreelon solution. Without Kreelon, the sink time in distilled water is a matter of hours rather than seconds.

cleans as it wets

Closely related to thorough cleaning is efficient wetting out of materials not readily wetted by water alone. *Wyandotte Kreelon*, the versatile new synthetic organic detergent, is a highly effective wetting agent.

Kreelon penetrates, spreads, emulsifies and disperses as it wets. The great value of Kreelon lies in its ability to function well in acid, alkaline or neutral solutions, in hard or soft waters, alone, or combined in solutions and dry mixes with a great many other chemicals.

Because of these properties, Kreelon is recommended for use in the production of industrial and household cleaning compounds, textiles, leather, insecticides and paper products. It is also useful in several phases of coal and ore processing. In any operation in *your* plant where an unusual amount of time and labor is required in the wetting-out process—or where an economical spreading and emulsifying agent is needed —Kreelon can help you do a *better* job, *faster*.

Kreelon is only one of many chemicals and chemical compounds being produced under Wyandotte's $25,000,000 plant expansion program. These expanded facilities, coupled with more than half a century of experience, will enable Wyandotte to produce quality chemicals in even greater quantity than before.

Write for your free copy of the new 28-page booklet describing the properties and suggested uses of Wyandotte Kreelon.

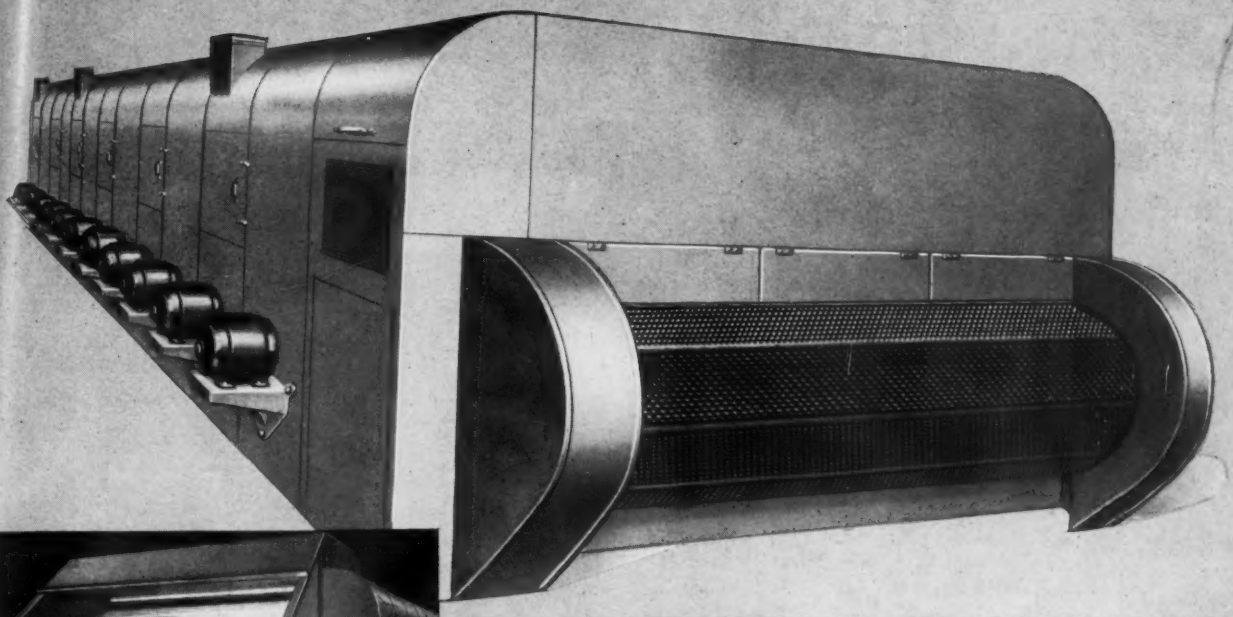
WYANDOTTE CHEMICALS CORPORATION
WYANDOTTE, MICHIGAN • OFFICES IN PRINCIPAL CITIES

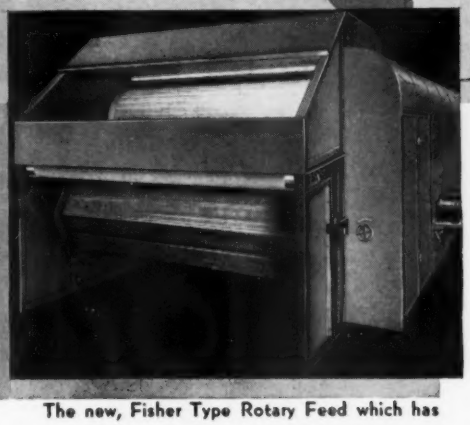
Soda Ash • Caustic Soda • Bicarbonate of Soda • Calcium Carbonate • Calcium Chloride • Chlorine • Hydrogen • Dry Ice • Glycols
Ethylene Dichloride • Propylene Dichloride • Chloroethers • Aromatic Sulfonic Acid Derivatives • Other Organic and Inorganic Chemicals

Wyandotte
REG. U. S. PAT. OFF.

SARGENT'S STOCK DRYER

MODERN—AUTOMATIC





The new, Fisher Type Rotary Feed which has replaced the conventional spiked Apron Type Feeder

for Drying Wool, Cotton, Rayon, Other Synthetic Fibres, Rags

The Sargent Automatic Stock Dryer meets all modern requirements of textile mills for fast, trouble-free production, at minimum cost.

Its high-velocity, pressure-type fans are directly connected to standard frame, ball-bearing motors. The machine is vibration-free. Stock is carried on the Conveyor of heavy-gauge steel sectional flights which are built to specifications for the type of work required. The Conveyor presents a constantly smooth surface, traveling on a variable-speed, covered chain drive. Some of its other features include: highly efficient heating coils; low steam consumption; heavily insulated removable hinged panels for easy inspection of work in travel; thermostatic controls; ease of cleaning; a minimum of maintenance cost.

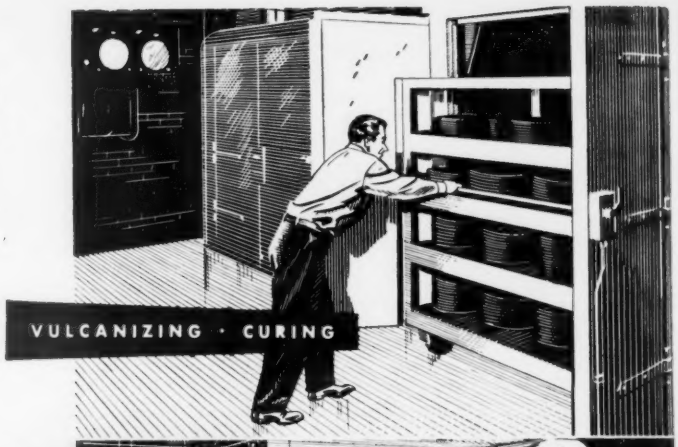
The machine's streamlined design affording a maximum area of drying surface, requires unusually small floor space for the volume of its high production.

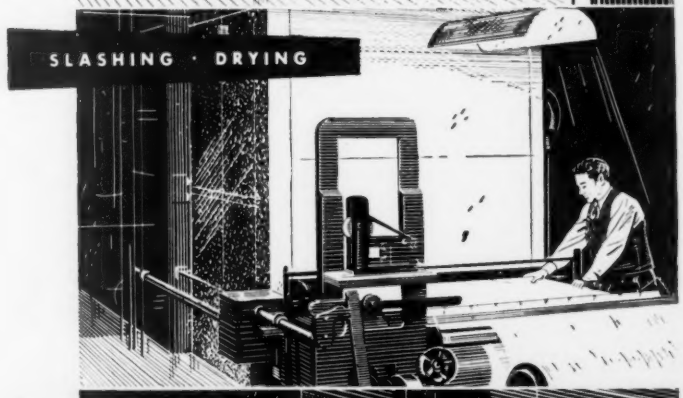
Please write us for complete details.

C. G. SARGENT'S SONS CORPORATION

GRANITEVILLE, MASSACHUSETTS, U.S.A

Production-Line Heating Emphasizes Versatility of GAS





These are the tasks for GAS—these and hundreds of other industrial heat processing requirements. In fact, modern Gas Equipment has proved its superiority in virtually every industrial production-line heating application.

As a source of heat in the manufacture and processing of ceramics, chemicals, textiles, printed materials, plastics, etcetera, GAS combines characteristics found in no other available fuel.

- **SPEED**—heat can be applied to any area or injected to any depth at exactly the temperature and speed desired.
- **CONTROLLABILITY**—automatic controls maintain precise temperatures, permit exacting cycles of heat processing on continuous 24-hour schedules.
- **FLEXIBILITY**—equipment is applicable over a wide range, performs many heat-treating and processing operations without expensive accessory devices.
- **ECONOMY**—the fuel and the modern equipment are economical, the production cost per piece amazingly low.
- **CLEANLINESS**—clean fuel facilitates good "shop housekeeping," promotes morale and good health among workers, eliminates many causes of rejects.

These are the characteristics of GAS you'll find useful in any industrial heating application—these are the reasons why you will find your local Gas Company Representative so helpful when you need heat for processing.

MORE AND MORE...

THE TREND IS TO GAS

FOR ALL INDUSTRIAL HEATING

AMERICAN GAS ASSOCIATION

420 LEXINGTON AVENUE, NEW YORK 17, N. Y.

sulphur colors

in sulphur colors,
the first and
foremost brand
names are

KATIGEN
IMMEDIAL
INDOCARBON

PRODUCTS OF THE GENERAL DYESTUFF CORPORATION

if your problem concerns sulphur colors
a consultation with General Dyestuff Corporation
may prove very beneficial

GENERAL DYESTUFF CORPORATION

435 HUDSON STREET, NEW YORK 14, N. Y.

UNISTEL

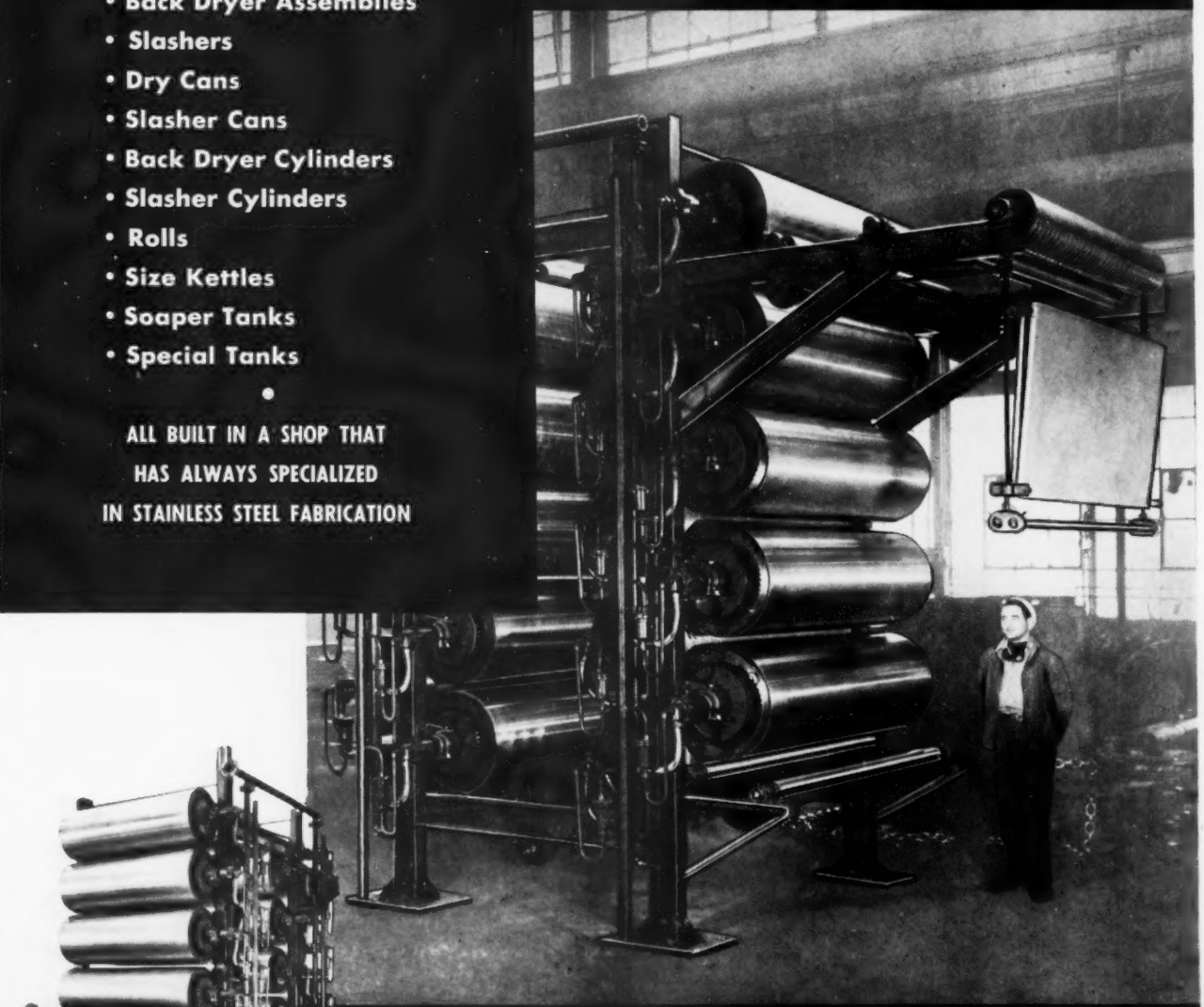
STAINLESS STEEL TEXTILE MILL EQUIPMENT

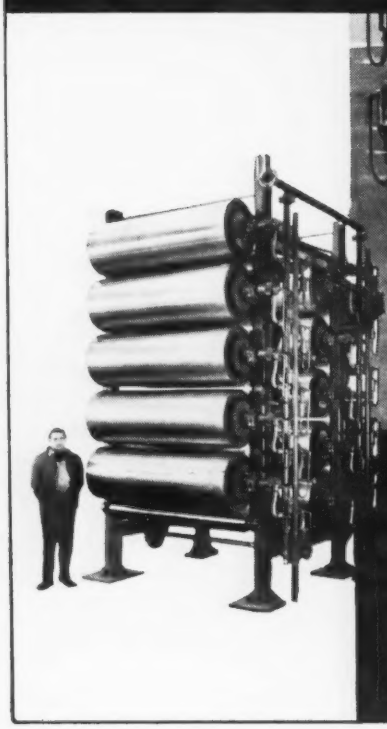
A NEW BULLETIN – FREE FOR THE ASKING – GET YOUR COPY

- Can Dryer Assemblies
- Back Dryer Assemblies
- Slashers
- Dry Cans
- Slasher Cans
- Back Dryer Cylinders
- Slasher Cylinders
- Rolls
- Size Kettles
- Soaper Tanks
- Special Tanks

•

ALL BUILT IN A SHOP THAT HAS ALWAYS SPECIALIZED IN STAINLESS STEEL FABRICATION





ENGINEERS DESIGNERS AND BUILDERS OF BACK DRYERS CAN DRYERS KETTLES ETC.

UNITED STEEL OF AMERICA, INC.

30 ROCKEFELLER PLAZA, NEW YORK 20, N. Y.

CANADIAN REPRESENTATIVES UNITED STEEL CORPORATION LTD OF CANADA, TORONTO

STANTEX* CONING OILS for NYLON

For hosiery and tricot yarns Stantex tested and proven oils of uniform high quality and stability insure—

- *Protection and lubrication for yarn and size*
- *Better cone build-up*
- *Improved knitting and weaving results*
- *Elimination of static*
- *Ease of removal in scouring*

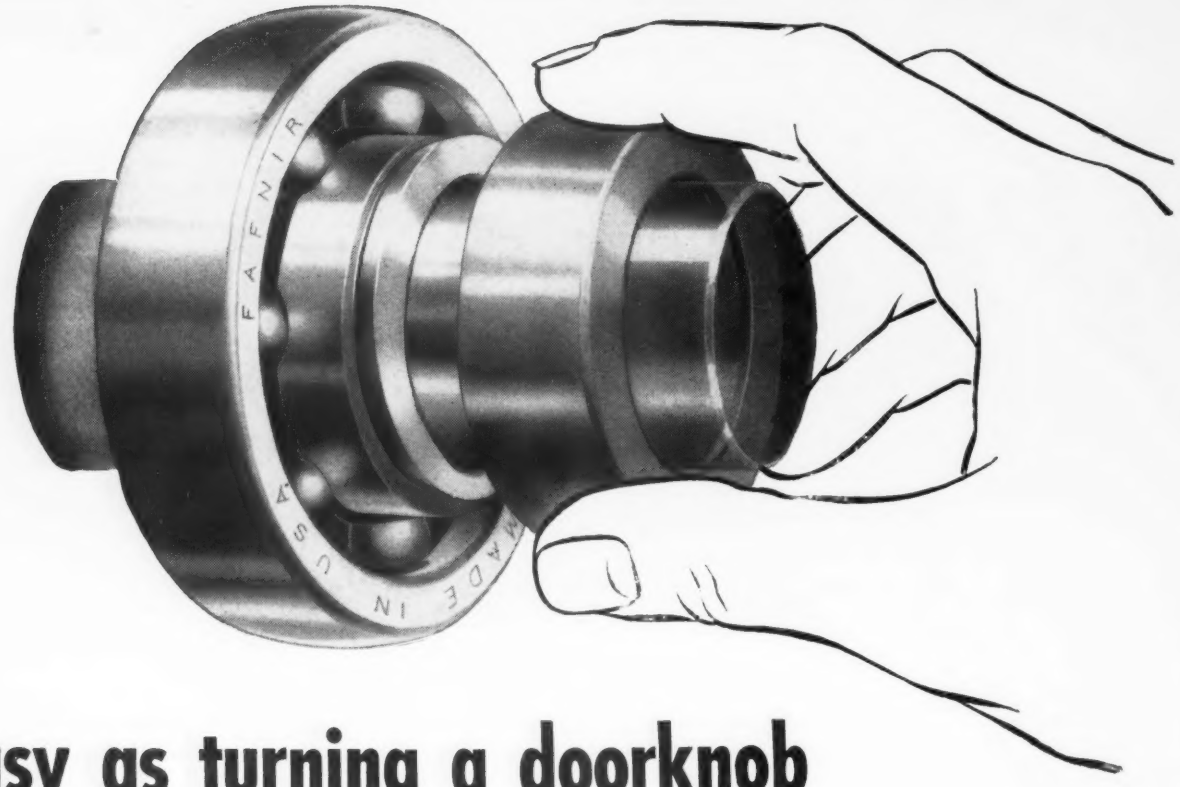
Our experienced representatives will assist you to select the proper oil for your requirements. Write for full information.

**Reg. U. S. Pat. Off.*

STANDARD CHEMICAL PRODUCTS, Inc.

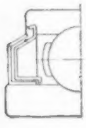
1301 JEFFERSON STREET, HOBOKEN, NEW JERSEY

HIGH POINT, N. C. | LEAKSVILLE, N. C. | PATERSON, N. J.
CHATTANOOGA, TENN. | PROVIDENCE, R. I. | SACRAMENTO, CAL.



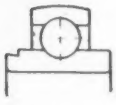
Easy as turning a doorknob

HERE'S HOW SIMPLE, fast and easy it is to mount a Fafnir Wide Inner Ring Ball Bearing on any shaft, anywhere, for any purpose. Pick the inch dimension bore size for your standard shaft. It slip-fits on the shaft and locks with a twist of the wrist. Turn the set screw for double-locking and the job's done. No shoulder to machine! No threading! No lock nuts, sleeves or adapters! Removes as easily. And that's not all . . .



Foul-proof seals

No displacement of the seals to worry about no matter how much shaft misalignment you have. The seals are integral with the bearing . . . move with the bearing and shaft. It's the Mechani-Seal, a labyrinth of interlocking steel plates which traps in lubricant and traps out dirt, dust and moisture.

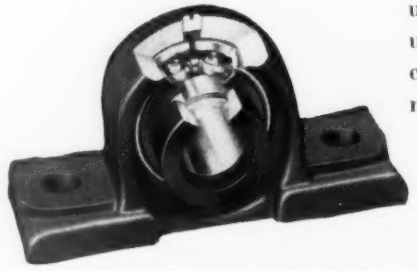


Easy to make self-aligning

See that rounded contour on the outer ring? A simple machining job on any type housing gives a matching contour in which the bearing moves freely yet is always square with the load.

Simple, inexpensive housing

The cut-away Fafnir Pillow Block shows how simple the housing can be for this Wide Inner Ring Bearing. Simple grooves on the inside surface of the housing conduct lubricant from the port at the top, around the exterior of the bearing and into the bearing through two holes in the outer ring. Since this bearing is completely self-sealed, no baffles, shields or other extra housing pieces are needed. Fafnir makes a complete line of housings for transmission units . . . pillow blocks, hanger boxes, cartridges, fan boxes and take-up units . . . and units for practically all textile machines.



Save money, machining, labor!

For replacing plain bearings, for new machinery set-ups, for most any friction eliminating job in your plant, Fafnir Wide Inner Ring Ball Bearings and special housings short-cut the job, save time and money and give you a bearing easier to install, remove and maintain. Your nearby Fafnir distributor will help you pick out just what you need. The Fafnir Bearing Company, New Britain, Conn.

MOST COMPLETE LINE IN AMERICA

FAFNIR
BALL BEARINGS

HEYDEN
CHLORINATED AROMATICS

Important to many processes as intermediates and solvents in the production of Pharmaceuticals, Dyes, Fungicides and Organic Chemicals.

CH_2Cl	$COCl$	CCl_3
BENZYL CHLORIDE	**BENZOYL CHLORIDE**	**BENZO-TRICHLORIDE**
Chlorinated Benzaldehydes	Chlorinated Benzotrichlorides	Chlorinated Benzyl Chlorides
Chlorinated Toluenes	Chlorinated Benzoyl Chlorides	Chlorinated Benzoic Acids

Ortho and Para chloro, 2,4 and 3,4 Dichloro, as well as several higher chlorinated derivatives, are also available.

Technical literature covering properties, specifications and shipping details will be mailed promptly on request.

PUT THE PLUS IN YOUR PROCESS

+

...Constant source of supply.
...Production control through uniformity.
...Exacting specifications—assured quality.
...Extensive facilities of 5 modern plants.

Serving Industry Through Finer Chemicals

HEYDEN CHEMICAL CORPORATION

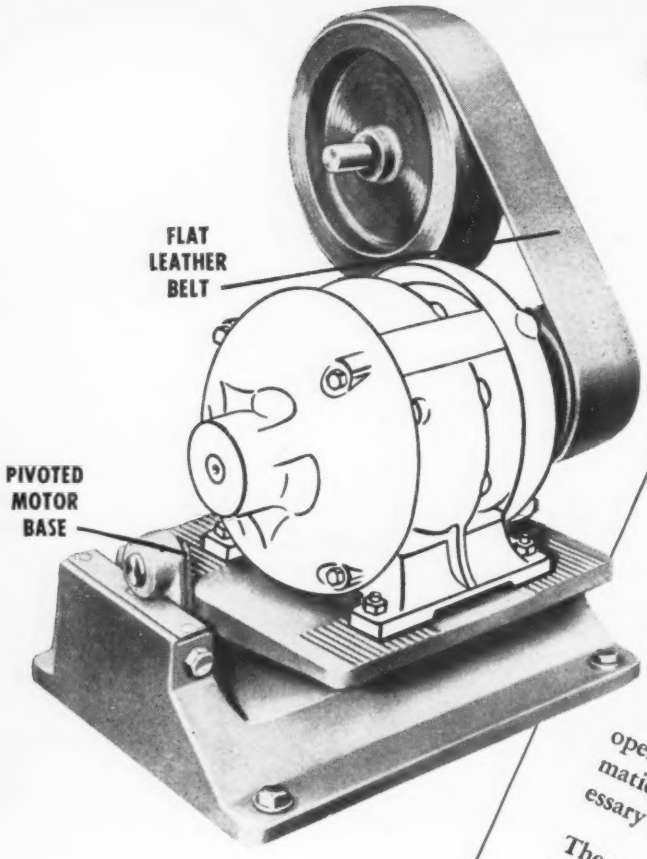
393 SEVENTH AVENUE, NEW YORK 1, N. Y.
CHICAGO OFFICE, 20 North Wacker Drive
PHILADELPHIA OFFICE, 1700 Walnut Street

Benzaldehyde • Benzoates • Benzoic Acid • Benzyl Chloride • Bromides Chlorinated Aromatics • Medicinal Creosotes • Formates • Formaldehyde Formic Acid • Glycerophosphates Medicinal Guaiacols • Hexamethylenetetramine • M. D. A. (Methylene Disalicylic Acid) • Paraformaldehyde • Parahydroxybenzoates Penicillin • Pentaerythritols • Salicylates

FINE HEYDEN CHEMICALS

THIS DRIVE

minimizes wear on bearings and belt



The modern leather belt, pivoted base drive automatically "babies" bearings and belt.

This type of drive automatically maintains belt tension that is just enough to drive the spinning frame efficiently. When you start the machine, the motor, mounted on the pivoted base "leans" into the job. This gives you a smooth, fast start that means fewer "ends down". As full operating speed is reached, the drive automatically "relaxes" to the minimum necessary tension.

The tension control of the base combined with the inherent pulley grip and shock absorbing capacity of a first quality leather belt assure maximum life with minimum wear.

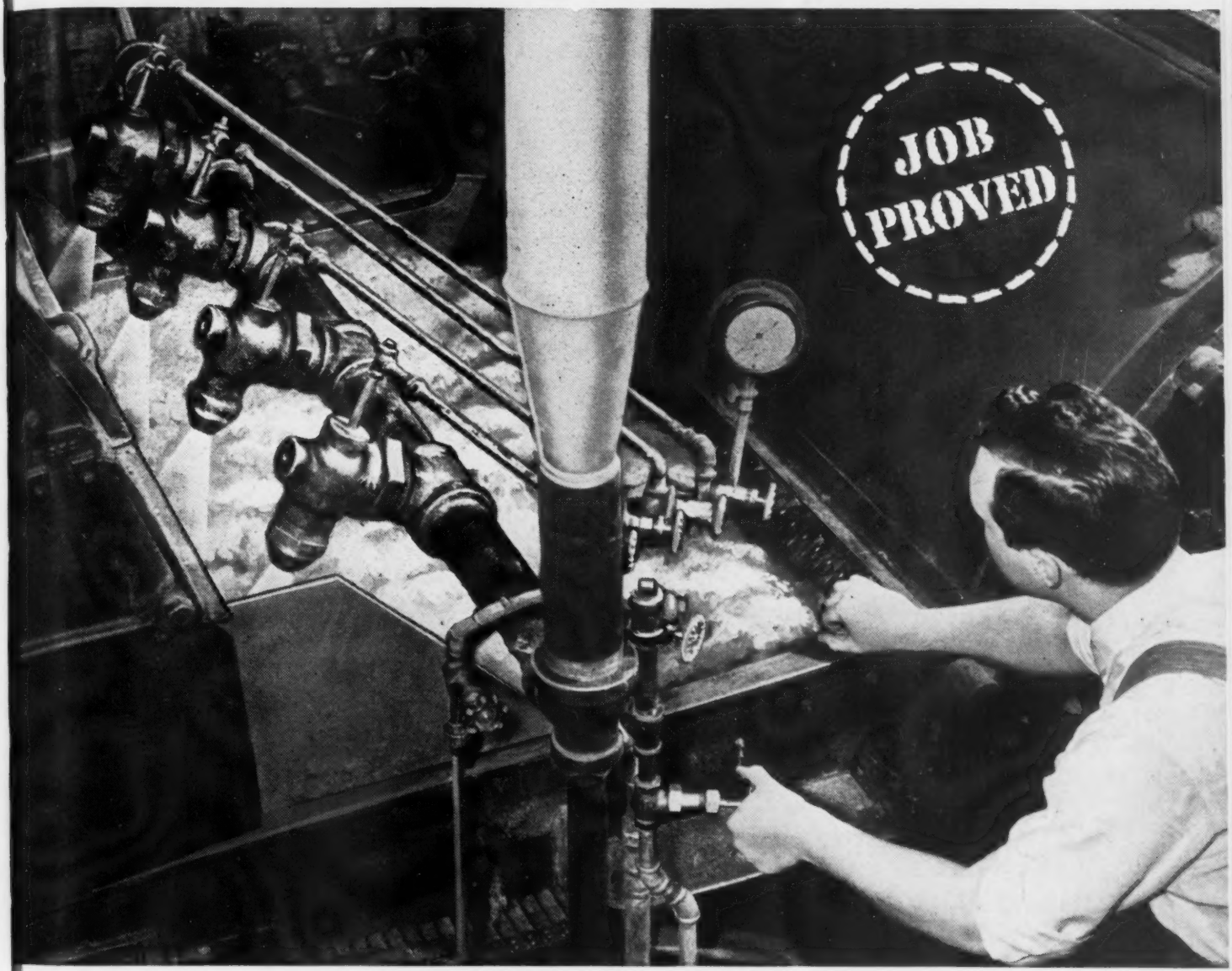
American LEATHER BELTING Association

Headquarters for Authentic Power Transmission Data

41 PARK ROW, NEW YORK 7, NEW YORK

AL-21

Increased Yield, Better Yarn, Lower Cost



SUN TEXTILE PROCESSING AID . . .

Recommended by Eastern worsted manufacturer, who says, "I have never used a better product."

An Eastern worsted manufacturer was paying a premium price for a well-known type of processing oil, but found the wool hard to process and the yield disappointing.

He brought this problem to a Sun Engineer, who recommended Sunotex, a Sun wool-processing oil which is used in dozens of woolen mills. This "Job Proved" product was put to work and scoured out evenly and quickly. Its use resulted in much cleaner wool and better-conditioned yarn.

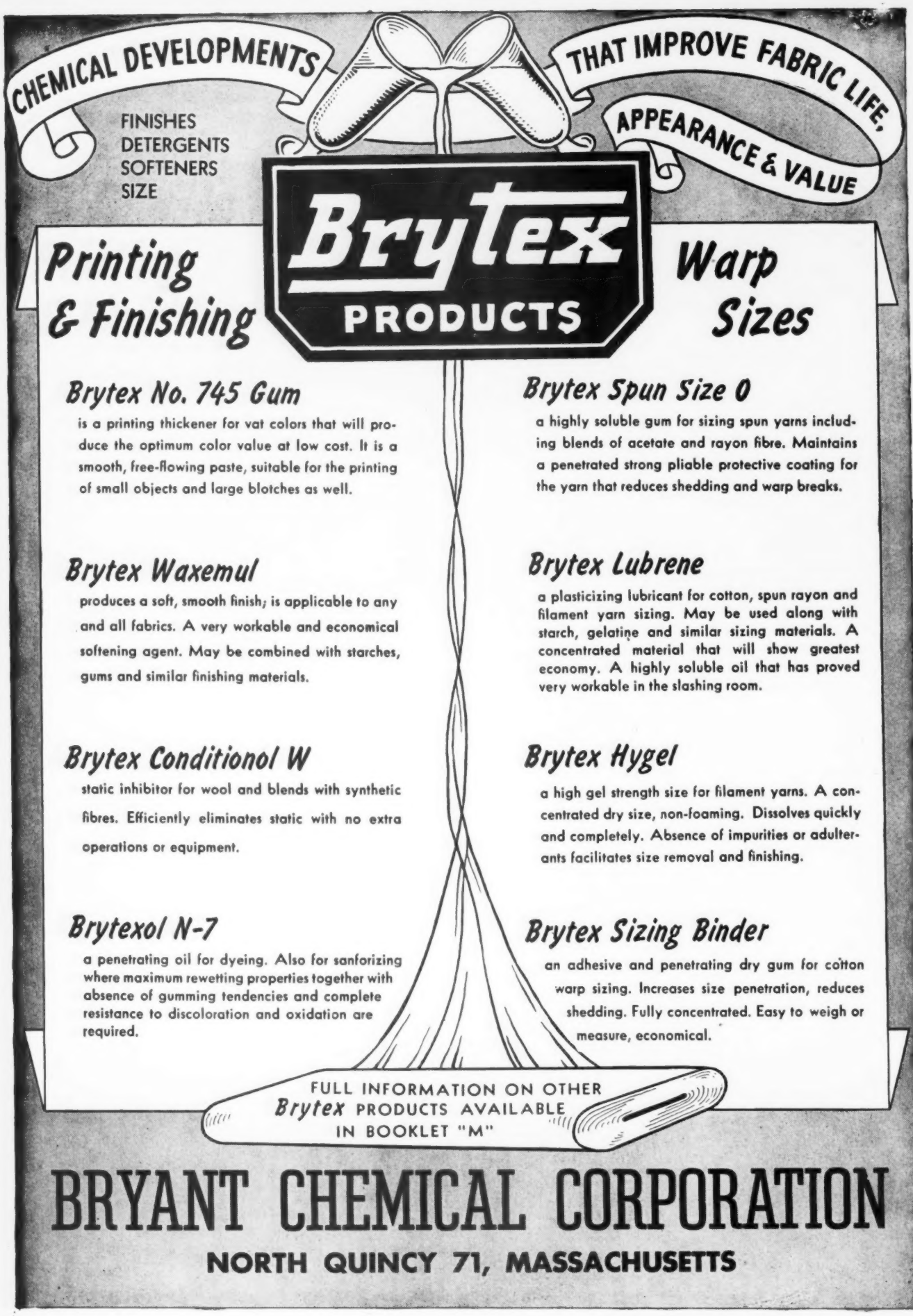
A saving of $2,000 a year was also realized, because of the difference in price between the Sun product and the oil formerly used.

"I have never used a better product for processing worsted stock," says the owner of the mill, after four years' experience with Sunotex.

More and more textile engineers are using Sun "Job Proved" processing aids and lubricants and getting results like those described above. If you are interested in the "Job Proved" Sun products that will help you produce more for less, write Department T-9.

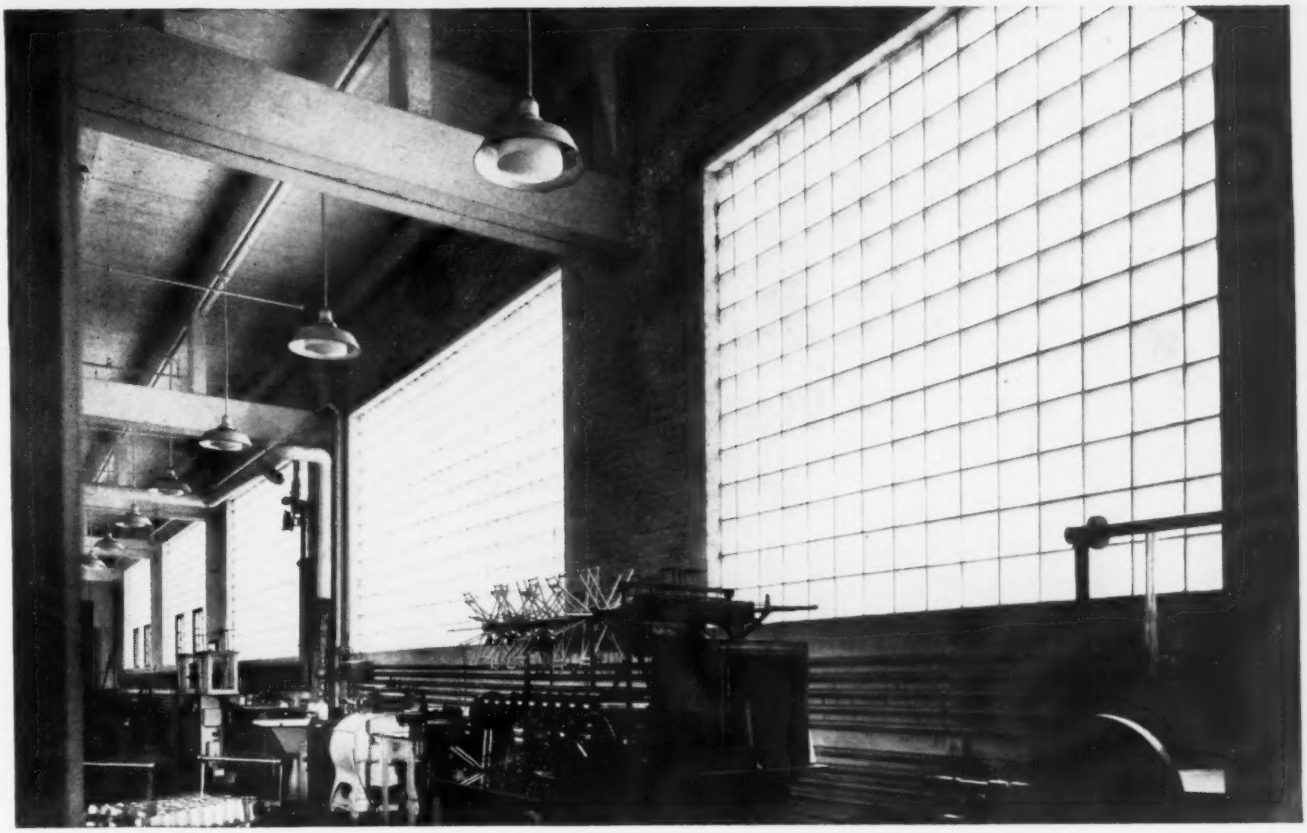
SUN
SUNOCO
INDUSTRIAL
PRODUCTS

SUN OIL COMPANY • ***Philadelphia 3, Pa.***
In Canada: Sun Oil Company, Ltd.—Toronto and Montreal


CHEMICAL DEVELOPMENTS
FINISHES
DETERGENTS
SOFTENERS
SIZE
THAT IMPROVE FABRIC LIFE,
APPEARANCE & VALUE
Brytex
PRODUCTS
Printing & Finishing
Warp Sizes
Brytex No. 745 Gum
is a printing thickener for vat colors that will produce the optimum color value at low cost. It is a smooth, free-flowing paste, suitable for the printing of small objects and large blotches as well.
Brytex Waxemul
produces a soft, smooth finish; is applicable to any and all fabrics. A very workable and economical softening agent. May be combined with starches, gums and similar finishing materials.
Brytex Conditionol W
static inhibitor for wool and blends with synthetic fibres. Efficiently eliminates static with no extra operations or equipment.
Brytexol N-7
a penetrating oil for dyeing. Also for sanforizing where maximum rewetting properties together with absence of gumming tendencies and complete resistance to discoloration and oxidation are required.
Brytex Spun Size O
a highly soluble gum for sizing spun yarns including blends of acetate and rayon fibre. Maintains a penetrated strong pliable protective coating for the yarn that reduces shedding and warp breaks.
Brytex Lubrene
a plasticizing lubricant for cotton, spun rayon and filament yarn sizing. May be used along with starch, gelatine and similar sizing materials. A concentrated material that will show greatest economy. A highly soluble oil that has proved very workable in the slashing room.
Brytex Hygel
a high gel strength size for filament yarns. A concentrated dry size, non-foaming. Dissolves quickly and completely. Absence of impurities or adulterants facilitates size removal and finishing.
Brytex Sizing Binder
an adhesive and penetrating dry gum for cotton warp sizing. Increases size penetration, reduces shedding. Fully concentrated. Easy to weigh or measure, economical.
FULL INFORMATION ON OTHER
Brytex PRODUCTS AVAILABLE
IN BOOKLET "M"

BRYANT CHEMICAL CORPORATION

NORTH QUINCY 71, MASSACHUSETTS



INSULUX PANELS direct daylight to work areas and aid in humidity control in this Chicago plant of Oscar Heineman Corporation.

Why textile mills need Insulux

PLANT requirements peculiar to the textile business make Insulux Glass Block a valuable aid in modern mills.

Insulux has proved superior to ordinary window and sash in a high percentage of mills, and that is why so many of the country's leading textile manufacturers are installing Insulux Glass Block.

Some reasons why

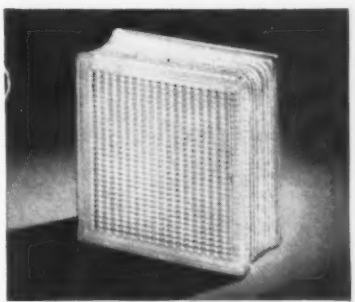
Investigate, and you'll discover important reasons for Insulux superiority—reasons such as these:

1. **Insulux Glass Block has a high insulation value—this means more uniform temperature control, less condensation during cold weather.**
2. **Insulux reduces maintenance costs—requires no painting, is easy to keep clean, and does not deteriorate even under high humidity conditions.**
3. **Insulux transmits and distributes daylight to plant interiors.**
4. **Insulux practically eliminates infiltration, helps keep plant air dust-free, and eases the job of humidity control.**

Every Insulux Glass Block is a sealed hollow unit, made of pressed glass. This unique construction offers a remarkable combination of advantages to textile mills—either for new construction or replacement of existing sash.

Get the facts

See for yourself why Insulux Glass Block is the perfect form of daylighting for textile mills. Consult your local Insulux dealer, or send coupon below for free booklet. It gives complete information on many successful Insulux Glass Block applications, and is fully illustrated.



INSULUX
GLASS BLOCK ®
AMERICAN STRUCTURAL PRODUCTS COMPANY
Subsidiary of
OWENS-ILLINOIS GLASS COMPANY

MAIL COUPON TODAY

AMERICAN STRUCTURAL PRODUCTS COMPANY
P.O. Box 1035, Dept. E-208
Toledo 1, Ohio

Gentlemen:

Please send me your free 36-page, fully-illustrated booklet, "Daylight in Industrial Buildings."

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Have You Tried "ELVACET" POLYVINYL ACETATE EMULSION

- **For development of semi-permanent finishes to improve hand, drape, appearance and launder resistance;**
- **As a stiffener for fabrics;**
- **As a preventive for edge rolling, warp-filling slippage and raveling;**
- **As a binder in back-filling compositions?**

Try it! You'll find this versatile resin may solve many of your finishing problems. With it, you can get practically any kind of a hand or drape. And at low cost—for it takes very little "Elvacet" to get required effects.

"Elvacet" can be applied with conventional finishing equipment. It can be used on a wide variety of non-woven, woven and knitted fabrics made from filament and staple yarns of all types and all constructions. Typical classes of goods which can be treated with "Elvacet" include: woven and knitted piece goods, toweling, pile fabrics, drapery fabrics, tricot knits for inner and outer wear, hosiery, etc.

We'll be pleased to tell you more about "Elvacet," how it can be used in economical finish formulas. Just write or call our nearest district office.

ADVANTAGES OF "ELVACET" POLYVINYL ACETATE EMULSION

Completely dispersed in water to give emulsion which contains resin particles of uniformly very small size.

Highly concentrated, with no modifiers. Easily diluted with water to requirements.

Highly compatible with starches, dextrins, gums, waxes and synthetic resins commonly used in semi-permanent and permanent finishes; also with ester-type plasticizers which are sometimes needed with "Elvacet" to get effects desired.

Highly stable—very little settling over fairly long periods or when highly diluted for normal use.

E. I. DU PONT DE NEMOURS & CO. (INC.)
ELECTROCHEMICALS DEPARTMENT
WILMINGTON 98, DELAWARE

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BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY

Knitting quality

that sells...

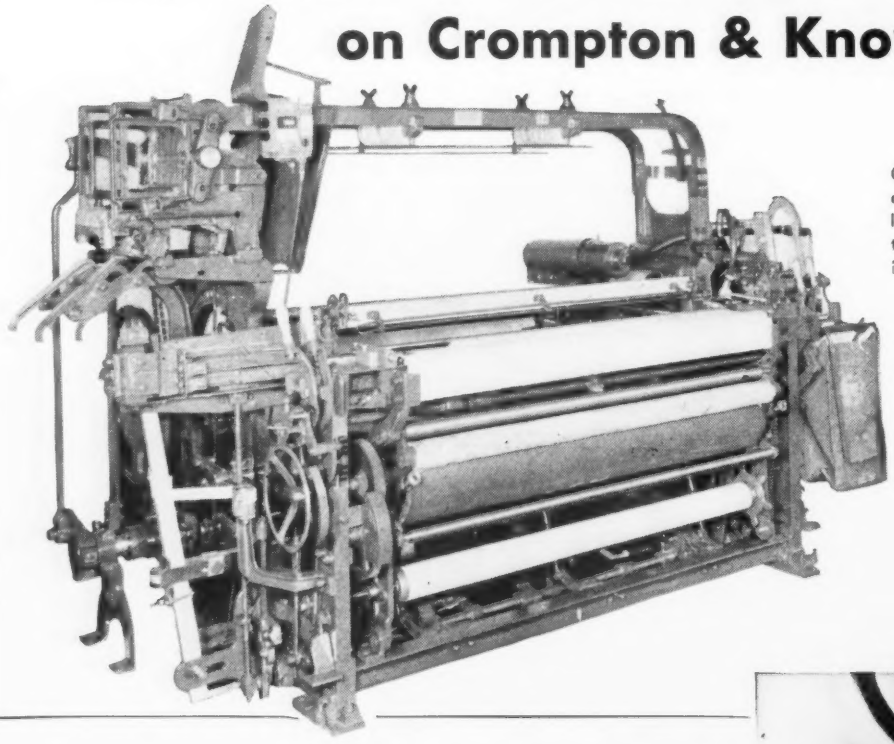
Torrington Needles

THE TORRINGTON COMPANY
Torrington, Conn., U. S. A. Est. 1866
Branches: New York, Philadelphia, Chicago, Greensboro, N. C., Boston, St. Louis, Toronto, Canada. *Pacific Coast Representative:* E. G. Paules, 1762 West Vernon Ave., Los Angeles 37, Calif. *In England:* Broadgate House, 7-10, Eldon Street, London E.C.2

There's a **TORRINGTON** Needle

for every type of Knitting!

Torrington Needle Bearings Help Improve Quality of Finished Fabric on Crompton & Knowles Looms



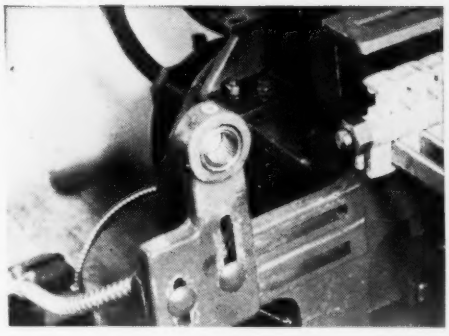
Crompton & Knowles Model S-6 Silk and Rayon Loom secures more efficient lubrication and reduced wear through the use of Torrington Needle Bearings in whip roll and swing reed hanger.

. . . reduction of wear in exacting rotating and oscillating applications helps maintain uniform beat-up and warp tension.

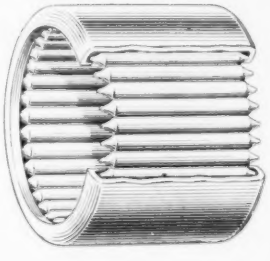
Exact tension control and uniform beat-up are more readily maintained in Crompton & Knowles Model S-6 Looms by reduction of wear and friction in the whip roll and swing reed hanger through the use of Torrington Needle Bearings.

Despite the small amplitude of oscillation, a constant cushioning film of lubricant over bearing surfaces is assured by the bearing design. Closely turned-in lips of the retaining shell conserve lubricant. Small diameter rollers distribute it evenly over rolling contact surfaces. Excessive lubrication is avoided, too, eliminating the possibility of soiling fabric passing close beneath bearing housings.

Compact design, easy fabrication and assembly, reduced power consumption and longer service life are other advantages of Needle Bearings, proved in spinning, knitting, weaving, finishing and other textile machine applications. Call on the specialized experience of Torrington's engineers to help you adapt these efficient, low-cost anti-friction bearings to *your* equipment.



Close-up of whip roll support bracket shows closed end type (M-1616) Needle Bearing in self-aligning mounting.



THE TORRINGTON COMPANY

Torrington, Conn. • South Bend 21, Ind.

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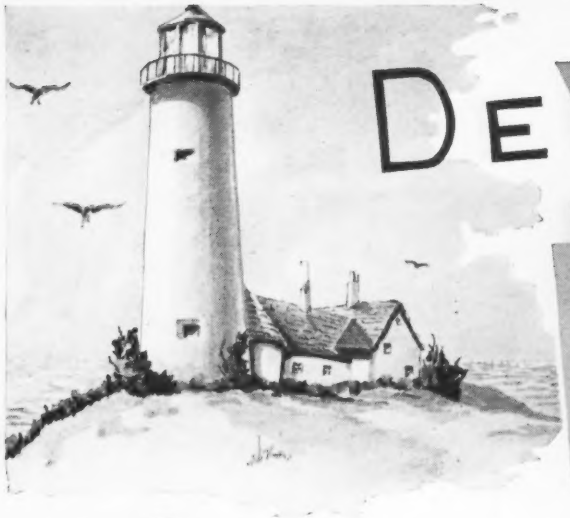
TORRINGTON *NEEDLE* **BEARINGS**

NEEDLE • SPHERICAL ROLLER • STRAIGHT ROLLER • TAPERED ROLLER • BALL • NEEDLE ROLLERS

Profits made with air
Modern textile mills pick extra profits out of the air with scientific, year-round Carrier Air Conditioning. Fine humidity and temperature control, the elimination of dust and dirt boost output, improve quality. Yarns are easier to process, machines stay in adjustment longer. Employees work better, produce fewer seconds. Correct air conditioning for textile mills takes accurate knowledge and long experience. Informed Carrier engineers are the most experienced in the field. That's why you can count on Carrier Air Conditioning for long, efficient, low-cost service. Carrier Corporation, Syracuse, New York.
Carrier
AIR CONDITIONING • REFRIGERATION • INDUSTRIAL HEATING
TEXTILES – A PHOTOGRAMATIC INTERPRETATION BY MEDNICK



DEPENDABLE VALVES

to safeguard *flow control services* in all industries

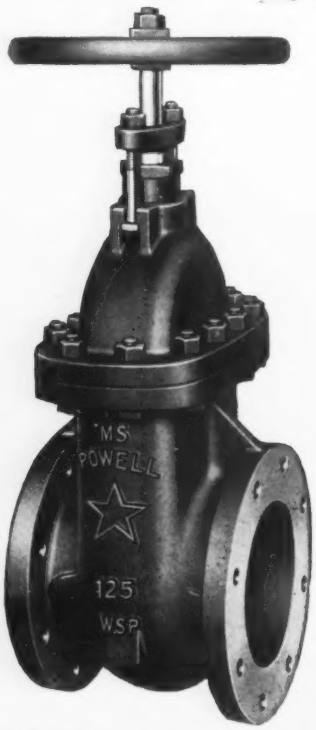
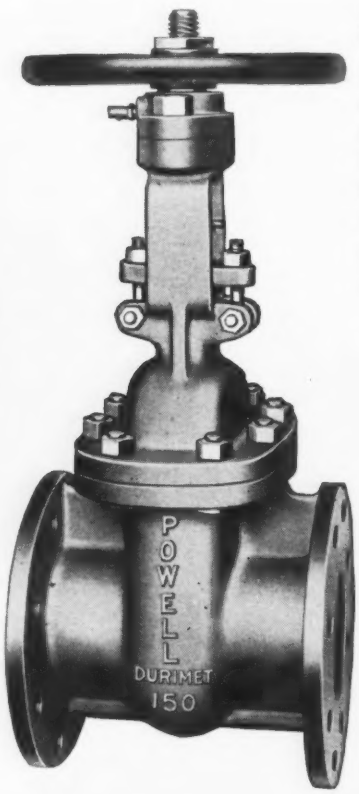


Fig. 1787 — Large 125-pound Iron Body Bronze Mounted Gate Valve. Made in sizes 2" to 30", incl. Has flanged ends, bolted flanged yoke, inside screw non-rising stem and tapered solid wedge. Also available with double wedge in sizes 2" to 12", incl—**Fig. 1431.**

Fig. 2453-G—Standard 150-pound Stainless Steel Gate Valve with flanged ends, outside screw rising stem, bolted flanged yoke-bonnet and tapered solid wedge.



Just as mariners depend on lighthouses to safeguard their ships, so the men of industry depend on their flow control equipment to safeguard their manufacturing plants from "going on the rocks" of costly shut-downs.

With a background of more than a century of making valves—and valves only—Powell Engineers know how to make a valve dependable.

And because the Powell Line is so *complete*, there are Powell Valves—in Bronze, Iron, Steel, and the widest range of Corrosion-resistant materials ever used in making valves—specifically designed and made to give long, dependable performance in each and every flow control service known today.

It pays to consult Powell Engineers on all your requirements for flow control equipment.

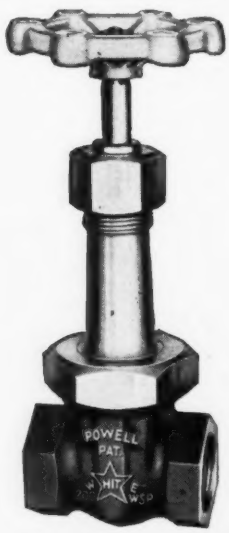


Fig. 375—200-pound Bronze Gate Valve with screwed ends, inside screw rising stem, union bonnet and renewable wear-resisting "Powellium" nickel-bronze disc.

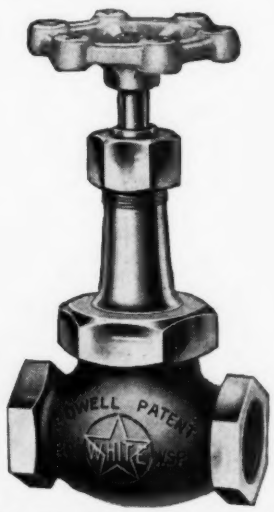


Fig. 1708—200-pound Bronze Globe Valve with screwed ends, union bonnet, renewable, specially heat treated stainless steel seat and regrindable, renewable, wear-resisting "Powellium" nickel-bronze disc.

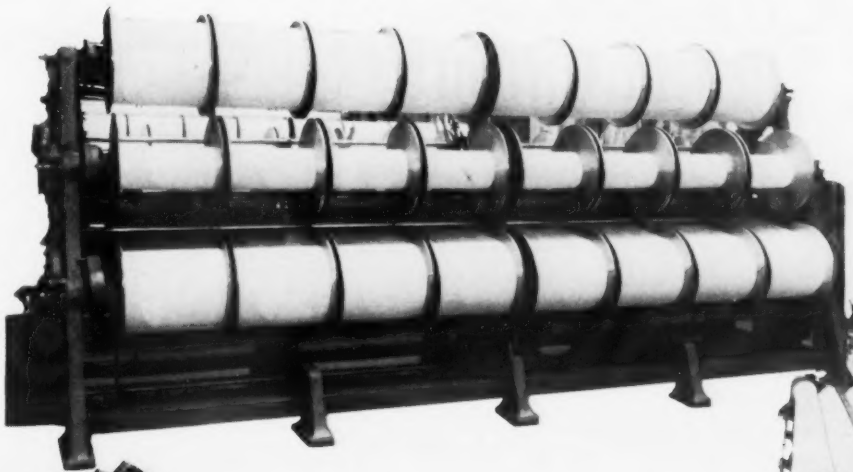
The Wm. Powell Company

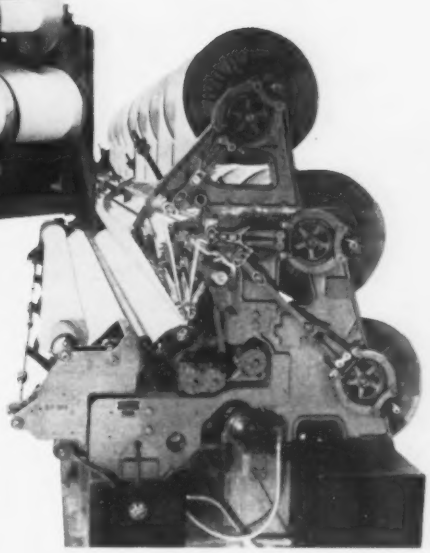
Cincinnati 22, Ohio

DISTRIBUTORS AND STOCKS IN ALL PRINCIPAL CITIES

POWELL VALVES

Here is the *Reiner* 3 BAR TRICOT MACHINE





There is a profitable market for 3-bar tricot cloth. To meet this demand, Robert Reiner, Incorporated, are building a 3-bar tricot machine which manufactures unexcelled cloth of novel design in nearly unlimited variations in plaids, stripes, checks, inlays, etc.

This 3-bar tricot machine runs at 320 courses per minute and can be stepped up to 360 courses when used as a 2-bar machine. Gauges are 14, 24, 26, 28, 32. Chain link or pattern wheel drive. The machine takes spools up to 21 inch flange diameter, or those of any conventional size.

This machine is already producing at various mills to the entire satisfaction of experienced knitters. Those interested in this profitable market are invited to write for details. Early deliveries are assured.

ROBERT REINER INC.

550-556 GREGORY AVENUE
WEEHAWKEN, NEW JERSEY

FOUNDED IN 1

10 MINUTES FROM TIMES SQUARE. Take Bus Nos. 61, 67, 167 from the Times Square Public Service Terminal at 260 West 42nd Street, New York City. Get off at Pleasant Avenue, Weehawken, New Jersey. From there turn left and walk through the underpass up to Gregory Avenue . . . . . TELEPHONE: UNION 7-0502, 0503, 0504, and 0505.

TEXTILE MACHINERY and

PUBLISHED BI-MONTHLY FOR TEXTILE MILL EXECUTIVES AND OPERATING PERSONNEL BY PROCTOR & SCHWARTZ, INC.

• SEPTEMBER • 1948 •

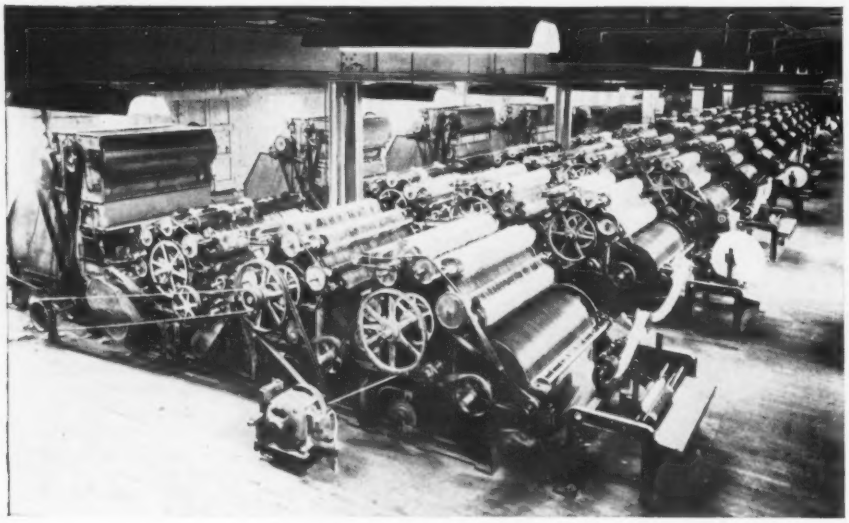
Metallic Wire Worsted Cards Score New High in Output

Wherever Proctor metallic wire worsted cards are in operation production figures reach new high levels. These Proctor metallic wire worsted cards have far greater capacities than any cards with less recent types of clothing. Actual production figures compiled in one mill where some metallic worsted cards were replacing older type cards revealed amazing facts. The new Proctor cards operated in slightly more than ¼ of the floor space formerly required. The new cards increased production 185.6% per card. The average production per card, per hour was raised from slightly more than 32 pounds to nearly 93 pounds. The check further revealed a 40% saving in labor and saving on 51.3% in power consumption. With all of this increased production and decreased cost of operation—careful study of the carded wool revealed that the quality of the sliver was better than that ever produced before on any type of card in the mill. This mill's card room is now completely equipped with Proctor metallic wire cards.

The situation is the same in mill after mill where this revolutionary type of carding equipment has replaced machines of less recent design. There is a strong trend throughout the industry to this modern equipment as evidenced by the fact that there are firm orders on hand for more than 60 complete cards.

If you would like to learn first hand what the production possibilities of your card room would be if equipped with Proctor metallic worsted cards—allow Proctor engineers to study your mill and give you the figures.

In the meantime you may well be interested in the complete findings of the survey highlighted. It is available in booklet form upon request. Write for your copy.



Card room of National Worsted Company, Jamestown, N. Y., another progressive mill now completely equipped with 12 Proctor metallic worsted cards.

NEW CATALOG AVAILABLE ON PROCTOR HOSIERY BOARDING MACHINES

A new 24 page, profusely illustrated catalog on Proctor Automatic Hosiery Boarding equipment has just recently come off the press and is available on request.

Included is the latest information about both the machine for women's hosiery and the companion one for men's socks. Also it includes a complete time study showing by actual tests, the increased production and savings possible with this equipment when compared to less recent or less automatic methods.

Write for your copy today.

DELIVERY DATES ON MANY MACHINES BEGINNING TO IMPROVE

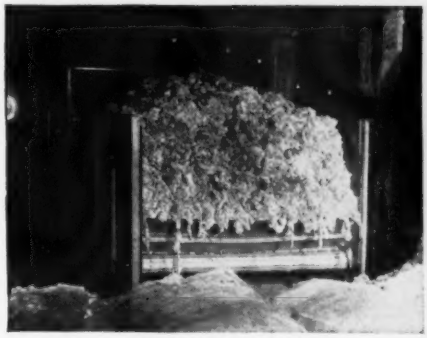
It will be good news to the textile mill in urgent need of new equipment to learn that the delivery dates on many Proctor machines are beginning to improve.

While the situation is somewhat better than a year ago—it is still wise to give careful consideration to your future equipment needs and place orders now for future delivery—for orders are still being filled in the order received.

Let Proctor engineers discuss your needs and give you an accurate idea of when you may expect delivery.

DRYING EQUIPMENT *News*

Rocar Opener Makes Possible Double Capacity Better Opening of Grease Wool



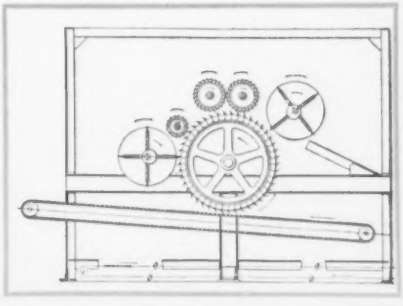
Wool is piled high in feed hopper

Wool about to enter first section

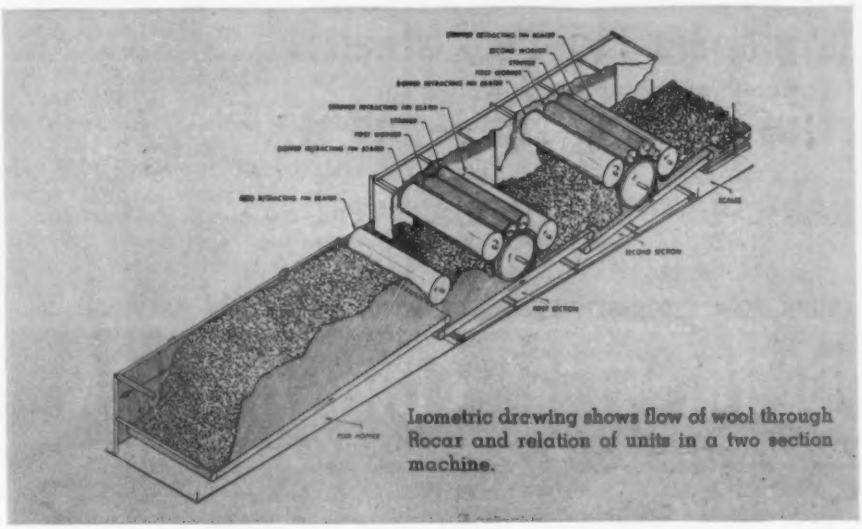
Close-up of wool on main cylinder

Rocar is the name applied to the recently developed device for opening of wool or similar fibers, preparatory to scouring or other processing. It combines much greater output than could previously be achieved—with improved opening of the wool and more gentle treatment of the fibers. In addition—it represents a great simplification in machinery. While present commercial equipment is limited to capacities of about 1500 to 3000 lbs. per hour, per machine —Rocar has a capacity of 4000 to 8000 lbs. per hour, per machine. The Rocar replaces the bale breaker, picker, and cylinder wool opener—combining all three into one high capacity, gentle, opening and feeding device. Variable speed control makes it possible to tie the control of the capacity of the Rocar up with some device such as a weighing scale, to uniformly control the capacity at a desired setting.

Diagrammatic view gives a quick picture of how a two section Rocar operates. Wool is dumped into a magazine feed and piled as high as the sides of the hopper will permit. The conveyor which supports the wool ratchets forward feeding the wool to the first Rocar section. Just before entering the first section there is a retractable pin beater which breaks down roughly piled wool and feeds a uniform layer through the feed hopper to the first section. The wool is worked in the first section and then passed into the second section for more working before the wool is discharged from the machine to a conveyor, scales or a scouring range. The Rocar may be designed as either a one or two section machine depending upon the mill's requirements.



One unit of a Rocar showing positions of main cylinder, workers, doffers and retractable beaters.



Isometric drawing shows flow of wool through Rocar and relation of units in a two section machine.

Proctor & Schwartz Inc • 701 Tabor Road • *Philadelphia 20, Pa* •

First cost is often a minor matter. Equipment made of Allegheny Metal lasts and keeps its beauty for a lifetime— cuts maintenance and depreciation costs to the bone. This pioneer stainless steel is really cheapest in the long run—and it's promptly available to your needs.

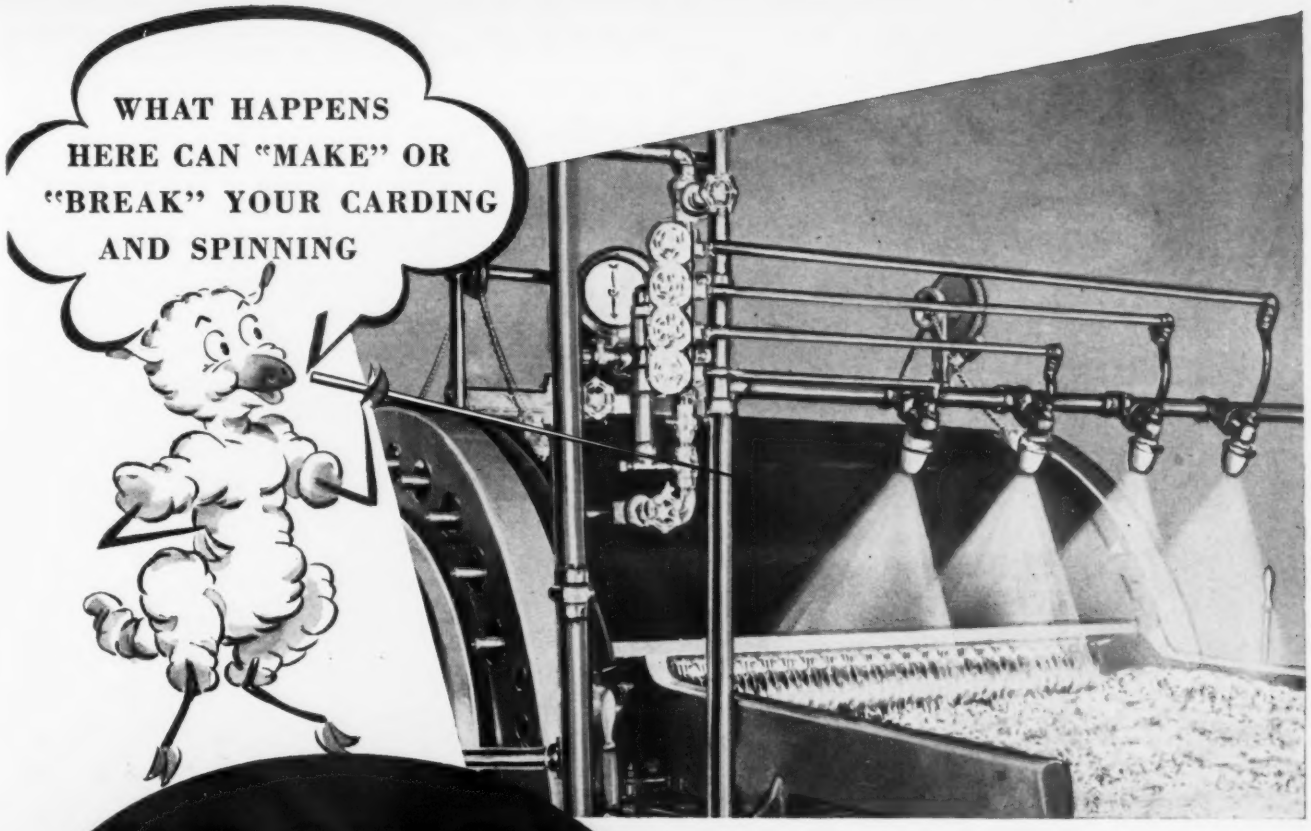
Complete technical and fabricating data—engineering help, too—yours for the asking.

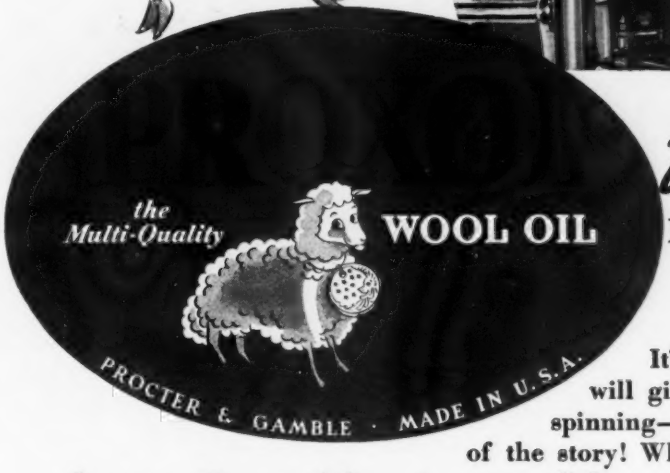
ALLEGHENY LUDLUM STEEL CORPORATION

The Nation's Leading Producer of Stainless Steel in All Forms

Pittsburgh, Penna. . . . Offices in Principal Cities

Allegheny Metal is stocked by all Jos. T. Ryerson & Son, Inc., Warehouses





the right answer

FOR YOUR WOOL CARDING AND SPINNING PROBLEMS

It's no trick to apply wool oil. And most good wool oils will give reasonably satisfactory results in carding and spinning—from a lubrication standpoint. But that's only part of the story! When the lubricating job is done, *will the oil scour out easily?*

If it falls down here, you know what can happen. Some oils are difficult to scour out. Others oxidize on the fibers, yarns and fabrics during storage, causing fabric discoloration, poor scouring, uneven dyeing and objectionable odors.

PROXOL lubricates efficiently—scours easily

Wool oiled with Proxol is properly oiled for smooth efficient carding and spinning. Fiber breakage is minimized. Furthermore, Proxol scours out easily and thoroughly after its lubricating job is done, with 40% to 75% savings in the soap normally used.

Your worries about discoloration and undesirable odors in stored fibers or fabrics are over when you use Proxol. Try Proxol. You'll find it a paying investment in terms of trouble-free carding, spinning and scouring.

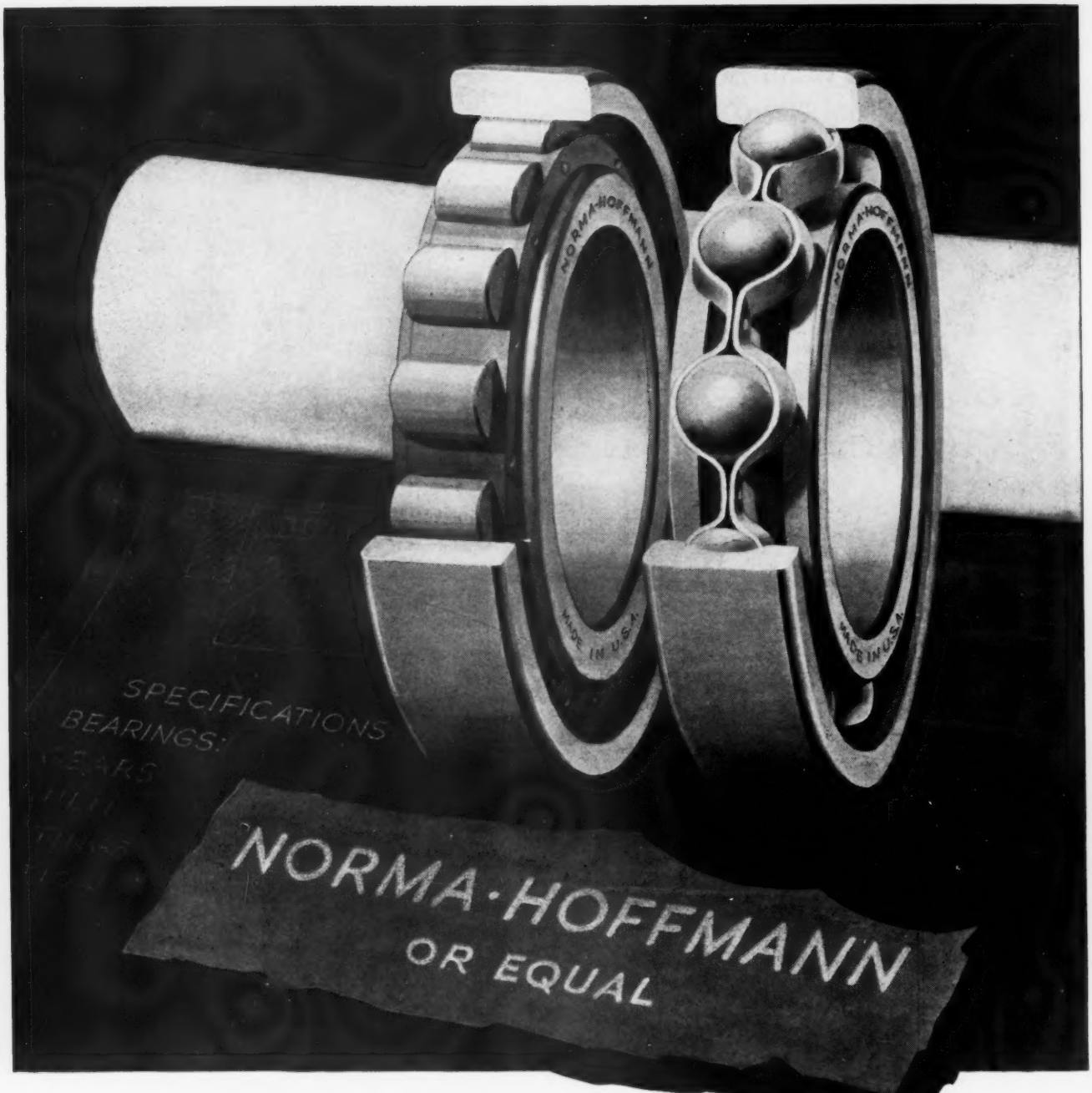
Procter & Gamble

what is Proxol?

Proxol is a clear wool oil of exceptionally uniform quality. Highly resistant to oxidation. Pour point less than 20°F. Self-emulsifiable in soft or hard water at all temperatures. Emulsions are extremely stable — stay the same after standing as when freshly prepared. Small emulsion particle size assures fast, even penetration. Antistatic—consistently produces less waste than is normally expected. Proxol's efficient lubrication and proper drag produce stronger, more uniform yarns, better fabrics . . . reduce stripping. Noncorrosive . . . assures longer life for card clothing. Proxol means fewer ends down...more yarn per spinning operator hour.

PROXOL

is made by the makers of Olate, the universal low-titre textile soap



A Good Beginning For Any Product

Here's why "Norma-Hoffmann or equal" is found on thousands of blueprints embracing all types of equipment. It results from designers' preference for bearings that have earned a reputation over the past 30 years for *precision* and *quality*.

And with good reason! These bearings provide ruggedness, dependability, long life and low upkeep. They assure minimum cost per bearing-year of service. Their accuracy and built-in high antifriction characteristics improve product performance. While the wide range of choice . . . 108 distinct series, over 3,000 sizes . . . makes selection easy.

NORMA-HOFFMANN
Precision
BEARINGS
BALL · ROLLER · THRUST

NORMA-HOFFMANN BEARINGS CORPORATION, STAMFORD, CONNECTICUT • FIELD OFFICES: New York, Chicago, Cleveland, Detroit, Pittsburgh, Cincinnati, Los Angeles, San Francisco, Dallas, Seattle, Phoenix

Color Dynamics..

Scientific use of *energy in color* builds up workers' morale, reduces fatigue, absenteeism and accidents . . . improves production!

• One of the departments of the Lily Mills Company of Shelby, N. C., after it had been decorated according to the principles of COLOR DYNAMICS.

Lily Mills executive praises new painting method!

THESE DAYS . . . alert manufacturers such as the Lily Mills Company of Shelby, N. C., consider carefully every development—no matter how new or unusual—which will help them build more and better goods.

Color Dynamics is new . . . is unusual—but within several years' time it has won praise such as this:

"Use of specific colors based on your Color Dynamic principles," writes J. W. Schenck, Secretary of Lily Mills, "is helping us to maintain a higher employee morale, a good safety record and efficient production throughout our entire plant."

Such success of Pittsburgh's new science, COLOR DYNAMICS, in a number of textile plants is not surprising. This new and purposeful use of the *energy in color* is based upon the physical and mental reactions of human beings to color.

Pittsburgh has worked out special methods to utilize this *energy in color* on every paintable surface—machines, floors, walls, ceilings and mobile equipment.

In all cases where these principles have been applied more work per man-hour and more man-hours per worker have been the result! Plant efficiency has been increased . . . Workers' eye fatigue is lessened, absenteeism is reduced, accidents are prevented and the quality and quantity of production are improved.

You can test COLOR DYNAMICS in your plant. Apply its principles to one or two machines—or one department. See the difference it makes in your organization.

Write for a FREE copy of our booklet, *"Color Dynamics"* which fully explains this new science. Address Pittsburgh Plate Glass Company, Paint Division, Dept. TW-98, Pittsburgh 22, Pennsylvania.

PITTSBURGH PAINTS

PAINTS • GLASS • CHEMICALS • BRUSHES • PLASTICS

PITTSBURGH PLATE GLASS COMPANY

LET THIS NEW EDMOS KNITTER PROVE HOW 1½ FEEDS PER DIAMETER INCH GIVE YOU HIGHER PRODUCTION AND PROFITS

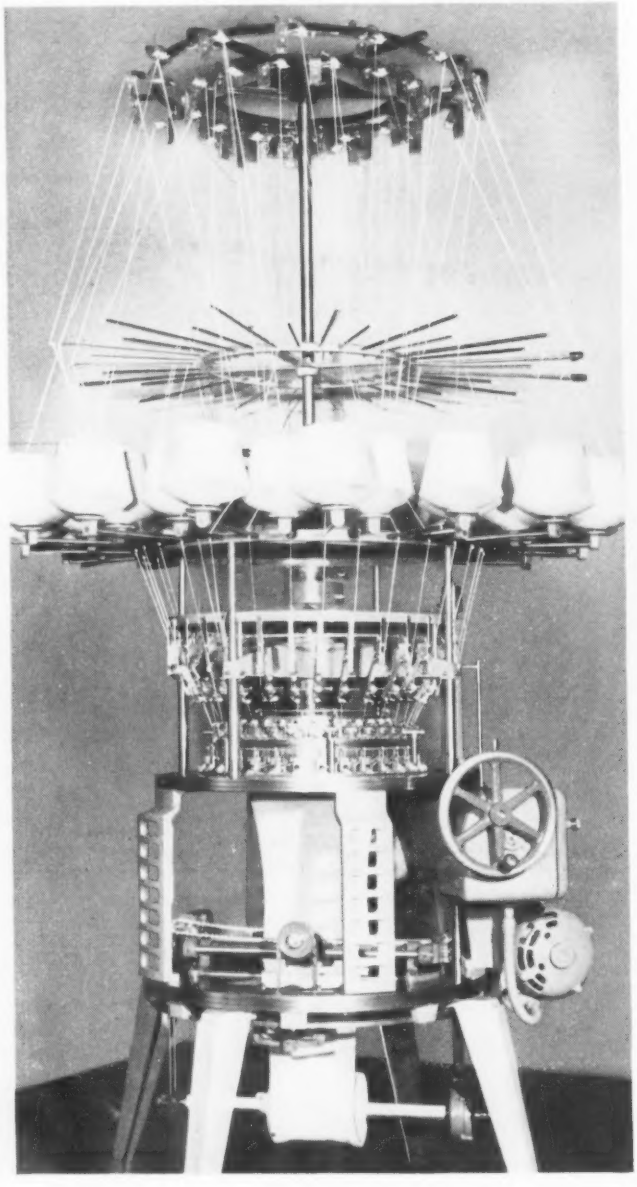
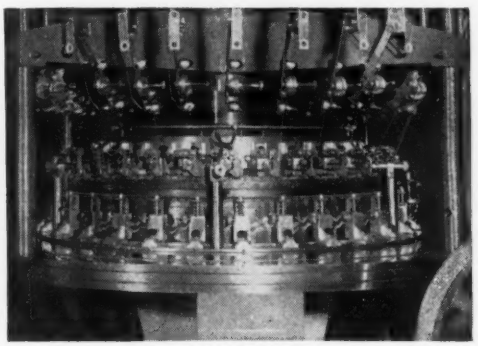


Illustration: Model Shown Is 20" - 30 Feeds

The new Edmos Type EEM Super Multi-Feed Plain Rib Body Machine, now available for early delivery, is daily proving that it produces up to four times more work than older type machines. Yet it occupies the same space. When you see this versatile knitter demonstrated at the Edmos plant, you will visualize its value to you in high speed operation and profits. Designed for Swiss rib fabrics, it is also ideal for cloth used in "T" shirts, polo shirts, etc.



Type EEM comes as follows:

12"—18 feeds	18"—27 feeds
13"—19 feeds	19"—28 feeds
14"—21 feeds	20"—30 feeds
15"—22 feeds	21"—31 feeds
16"—24 feeds	22"—33 feeds
17"—25 feeds	23"—34 feeds
24"—36 feeds	

All machines complete with motor drive and electric stop motions.

Type EEM features:

Simplified camming system both on cylinder and dial
Gear driven dial
Oversized dial shaft
Adjustable motor mount
Simplicity—Accessibility
Interchangeability

EDMOS PRODUCTS CORP., 13 Christopher Ave., Bklyn 12, N. Y.

Whatever your fabrics....

LIQUON

WATER TREATMENT *will help make them better*

The large amount of process water required in the manufacture of textiles of all kinds . . . natural or synthetic . . . makes the quality of the water an important factor in assuring best results.

The dissolved iron that causes stains . . . the hardness that interferes with scouring and dyeing . . . the turbidity and color that interfere with proper fabric finish of the yarn . . . all these water impurities must be eliminated, or reduced to maximum allowable limits.

For more than 30 years, LIQUON engineers and chemists have been successfully solving textile plant problems like these and designing equipment to condition water effectively and economically. The results of their long, specialized experience are at your service . . . For full information . . . without obligation . . . send the coupon below.

LC-144

LIQUID CONDITIONING CORPORATION

114 East Price Street, Linden, N. J.

Engineering Service Representatives in Principal Cities

LIQUID CONDITIONING CORP.
114 East Price St., Linden, N. J.

Please send me information on water treatment for textile plants, without obligation to me.

NAME_____

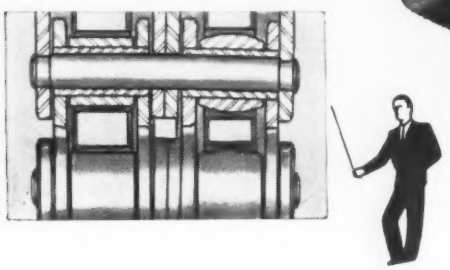
POSITION_____

COMPANY_____

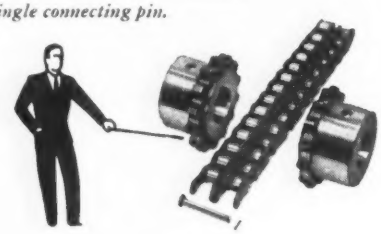
ADDRESS_____ TW-9-48

this Coupling gives you *True flexibility* without backlash!

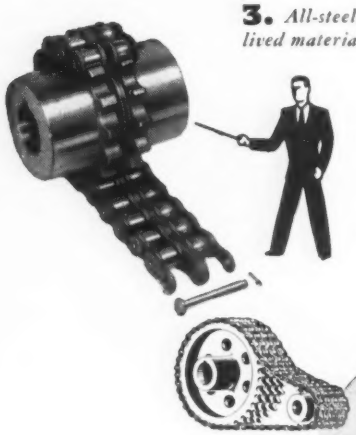
1. *True flexibility...maximum shock-absorbing ability because pins bend.*



2. *Easily installed or disconnected with single connecting pin.*



3. *All-steel. No short-lived material.*



● Baldwin-Rex Tru-Flex Couplings give you true flexibility without destructive backlash. These efficient chain couplings with their exclusive convex rollers on one chain strand give you better all-round performance . . . more protection for your machines . . . longer service. Here's why:

The convex rollers maintain only line contact with sprocket teeth and because of this contact, pins are designed to flex or bend. The flexing of the pin, plus the inherent flexibility of roller chains, accommodates misalignment, allows end play, and absorbs greater torsional shock loads. Too, this design permits the chain to be fitted snugly around the sprockets as contrasted to the "sloppy fits" of ordinary chain couplings. This, plus the fact that no short-lived materials are needed to give flexibility, makes it easy to see why Tru-Flex Couplings will give you longer, more efficient service.

For all the facts on Tru-Flex Couplings . . . how their single pin construction makes installation and disconnecting easy without an axial shift of either shaft . . . how they dampen pulsating loads . . . and their many other features, send for your copy of Bulletin No. 48-6. Address Baldwin-Duckworth Division of Chain Belt Company, 346 Plainfield Street, Springfield 2, Mass.

BALDWIN·REX

ROLLER CHAIN COUPLINGS

BALDWIN-DUCKWORTH DIVISION OF CHAIN BELT COMPANY

PRINTING ON PLASTIC GOES FASTER

IONOTRONS end "intolerable static condition" for Susquehanna Plastics, Inc.

Plastic films, printed with natural color reproductions of fruits and flowers, are popular products of Susquehanna Plastics, Inc. of Hawthorne, N. J. You've seen them, perhaps, as attractive table coverings.

Specially designed gravure printing equipment for this process now presents no static problem. It is equipped with the Ionotron Static Eliminator.®

Mr. George T. Howe, Plant Manager at Susquehanna Plastics, says:

"Due to the high speeds at which our presses are run, the plastic films would create an intolerable static condition if it were not for Ionotrons. They reduce fire hazard, improve spread of ink, avoid static shocks to personnel, and insure the delivery of static-free films."

Application to plastic films is only one of the increasing number of uses for the Ionotron. This unit, in the form of a simple bar, contains a continuous source of radiation which ionizes air at the point where static charges occur, and "bleeds off" the charges before trouble occurs. It requires no power connection and can't cause a fire. Its active life is far longer than that of machines on which it is used.

On wool cards and other textile machines, plastic coating and counting units, packaging and printing equipment, Ionotrons may be the answer to slow-downs due to static. For information write Dept. Q-2, U. S. Radium Corporation, 535 Pearl Street, New York 7, N. Y.

U.S. RADIUM

IONOTRON

Static

ELIMINATOR

OVEN TEST COOKS UP LONGER LASTING PRODUCTS

QUAKER PRE-TESTED PRODUCTS FOR THE TEXTILE INDUSTRY ARE PERFORMANCE-PROVED THROUGHOUT THE NATION

It may be called the "Oven Test," but to the buyer of Quaker Rubber Products it means producing rubber with the ability to withstand heavy static loads.

In making Quaker Rubber Hose it results in compounds of controlled specifications that will hold couplings over long periods of time . . . prevent hose from relaxing and allowing couplings to loosen. In packings, this pre-testing assures finished products that will hold their shape, will not relax, readily withstand pressures without the danger of blowouts.

This is only one of eighteen rigid tests that raw materials and finished products *must* pass before receiving the Quaker stamp of approval. Pre-testing provides quality and long service . . . assures worthwhile dividends for you through higher plant efficiency, lower operating costs. Call in your nearest Quaker distributor for hose, belting and packings.

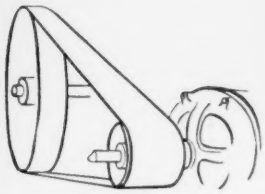
QUAKER RUBBER CORPORATION

PHILADELPHIA 24, PA. • New York 7 • Cleveland 15 • Chicago 16 • Houston 1
Western Territory
QUAKER PACIFIC RUBBER CO. • San Francisco 10 • Los Angeles 21 • Seattle 4

QUAKER RUBBER CORPORATION • PHILADELPHIA, PA. • QUALITY SINCE 1885

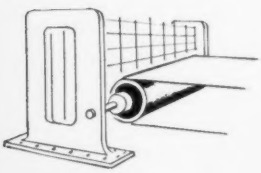
REG. U. S. PAT. OFF.

WHAT QUAKER Pre-Tested Products mean to the Textile Industry



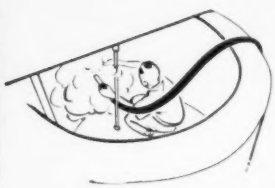
STEADY GRIP . . . LESS SLIP

Quaker V-belts and flat belting are pre-tested to provide plenty of grip, plenty of pull for more power. Pre-tested rubber stays flexible, withstands aging and abrasion.



LASTING, SHOCK-PROOF OPERATION

Quaker pre-tested rubber assures rugged service from take-off roll covering, picker stick bumpers, pick shoe bumpers, knotter bar bands.



LONG SERVICE AT HIGH PRESSURE

Quaker hose provides low-cost handling of steam, air, liquids, volatiles. Pre-tested rubber remains pliable, flexes easily, combats breakdown.

●

ENGINEERING SERVICE

When belting, hose, and packing problems bog down efficiency in your plant, call your Quaker Distributor for a quick solution.

QUAKER RUBBER PRODUCTS
custom made for every industrial use

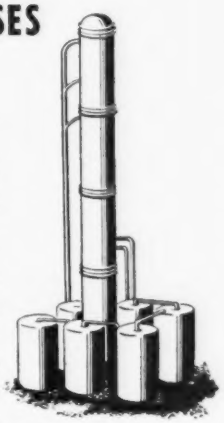
Announcing

SWIFT'S FATS and FATTY ACIDS

for technical uses

Swift & Company is now inviting inquiries on its new lines of fatty acids and fractionated glycerides. Extensive use of solvent processes will make possible new high standards of purity and stability.

1 THE PROCESSES



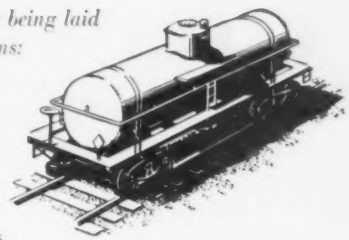
Solvent processes yield fat fractions of higher quality and wider usefulness. Most of Swift's new fats and fatty acids will be processed with solvents.

Unsaturated acids and drying oils will be separated by the Solexol process, using propane as a solvent. Fractions are separated selectively at temperatures not exceeding 200 degrees F. Since thermal and chemical side reactions are thereby avoided, products of greater purity and stability are obtained.

Saturated acids will be fractionated by solvent crystallization. Here, too, processing temperatures are low and harsh catalysts are absent, so that the natural structure of the substances is preserved.

2 THE PRODUCTS

Production plans are being laid for the following items:



Swift's Mixed Fatty Acids
Swift's Cottonseed Fatty Acids
Swift's Animal Fatty Acids
Swift's Linseed Fatty Acids
Swift's Corn Oil Fatty Acids
Swift's Soybean Oil Fatty Acids
Swift's Palm Oil Fatty Acids
Swift's Hydrogenated Marine Oil Fatty Acids

Swift's Fractionated Fatty Acids
Swift's Stearic Acid
Swift's Oleic Acid

Swift's Drying Oils
Swift's Fractionated Sardine Oil
Swift's Fractionated Menhaden Oil
Swift's Fractionated Soybean Oil
Swift's Fractionated Linseed Oil

Other Swift Glycerides
(*now in production*)
Swift's Lard Oils
Swift's Tallow Oil
Swift's Marine Oils
Swift's Neatsfoot Oil
Swift's Sperm Oil

Specialties
(*now in production*)
Swift's Sulfonated Sperm Oil
Swift's Sulfonated Tallow Oil
Swift's Sulfonated Castor Oil (Turkey Red Oil)
Swift's Sulfonated Neatsfoot Oil
Swift's Spermaceti
Swift's Textile Oils
Swift's Anti-foam Agents

3 SWIFT'S TECHNICAL PRODUCTS SERVICE

It brings you:

Representatives who know your problems and requirements.

Product technicians available for consultation on any Swift technical product.

Exploratory research developing products to further increase the efficiency of your operation.

This team is at your service now. Make use of it today!

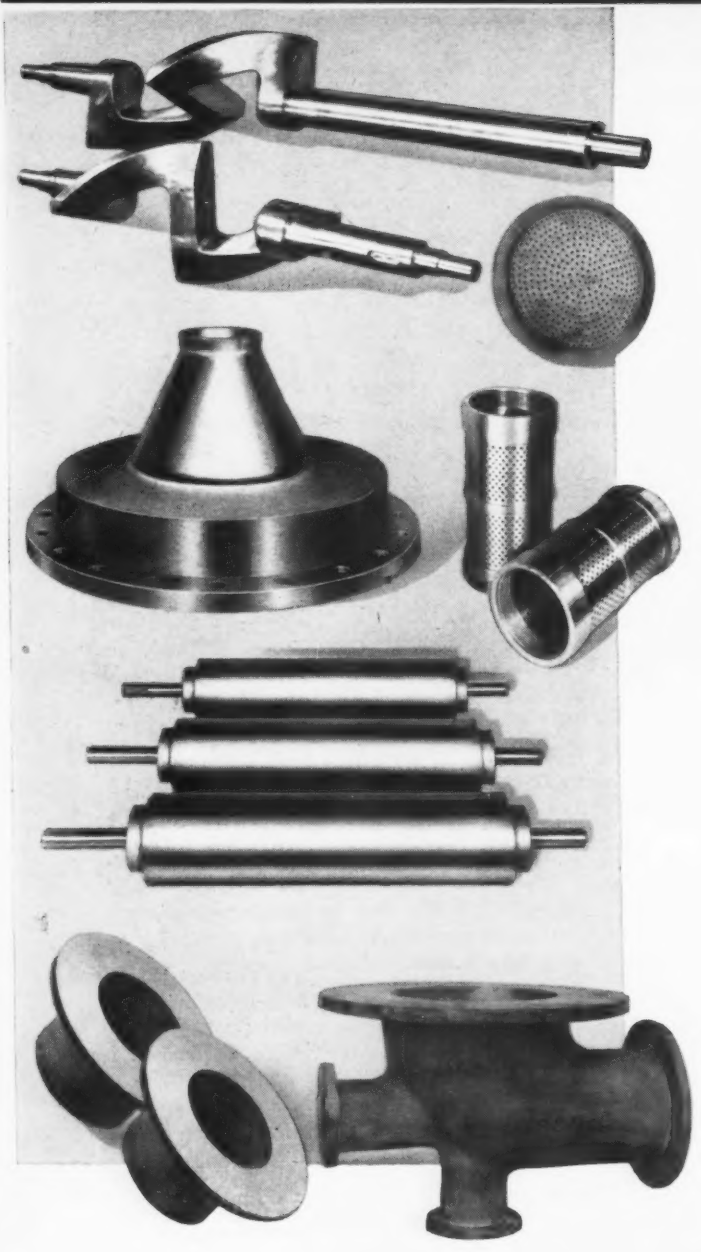
Address inquiries to:

SWIFT & COMPANY

INDUSTRIAL OIL DEPARTMENT
Union Stock Yards, Chicago 9, Ill.

MISCO *Stainless Steel* CASTINGS

CORROSION RESISTING • HEAT RESISTING • WEAR RESISTING



MISCO engineering, metallurgical and production facilities are at your service. We are pleased to furnish specific information on the proper analysis, design and application of stainless steel castings for best resistance to corrosion, heat and wear. Bulletins and engineering data sheets available upon request. Let us know your needs.

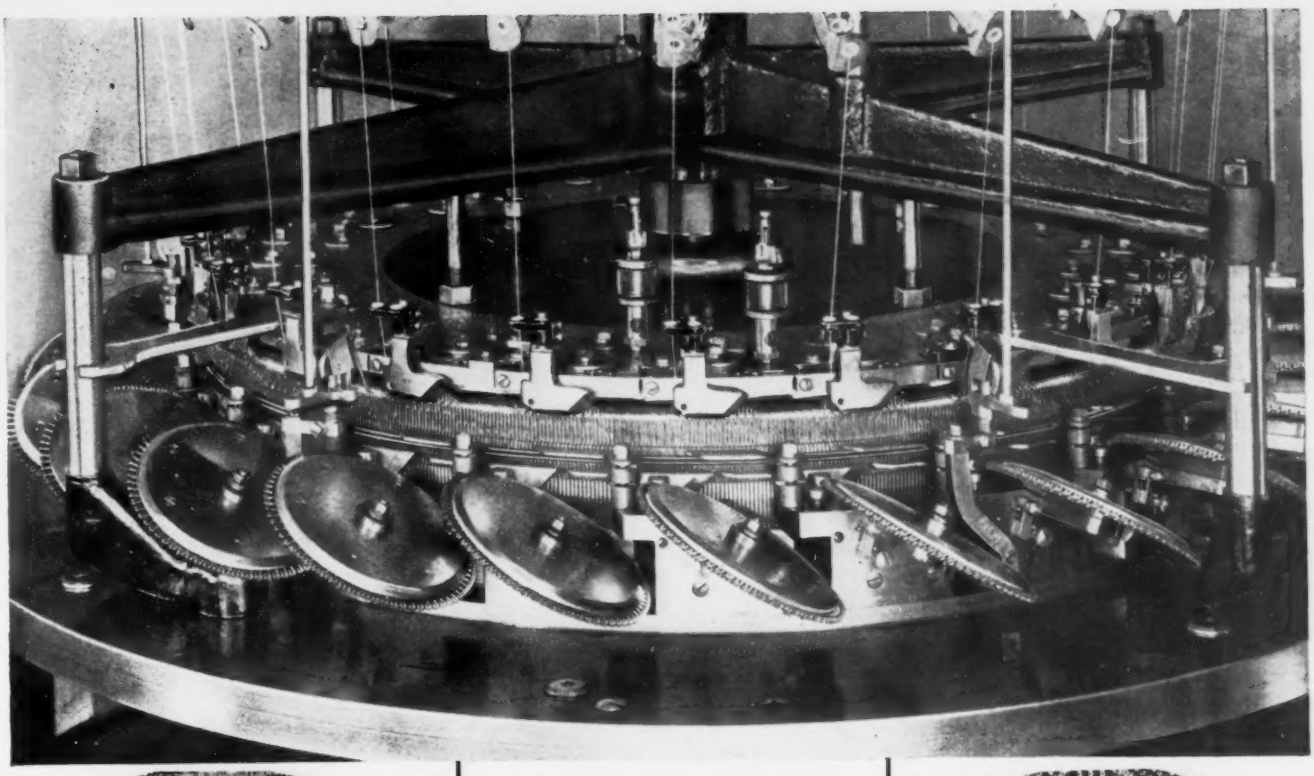
LARGE AND MEDIUM WEIGHT STAINLESS STEEL CASTINGS • SMALL PRECISION CASTINGS • CENTRIFUGAL CASTINGS

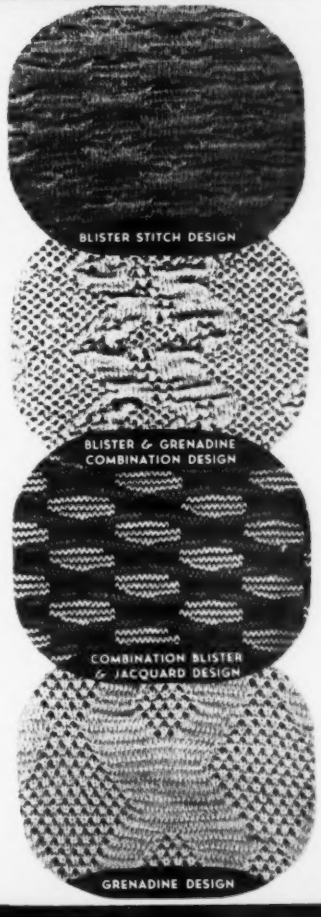
ALLOY CASTING DIVISION
Michigan Steel Casting Company

MISCO
Heat and Corrosion Resistant Alloys

One of the World's Pioneer Producers and Distributors of Heat and Corrosion Resisting Alloys

1996 GUOIN STREET • DETROIT 7, MICHIGAN





BRINTON PR-19

An improved pattern rib machine designed and built to produce innumerable fabric constructions at greater speeds.

24 Design Wheels operating on 24 Feeds produce Jacquard patterns most effectively.

Descriptive catalogue on request.

This Trademark on your machines represents more than half a century of experience.

H. BRINTON COMPANY

KENSINGTON AVE. & "M" ST. PHILADELPHIA 24, PA., U. S. A.

No worry about "weak links" when all piping is Crane

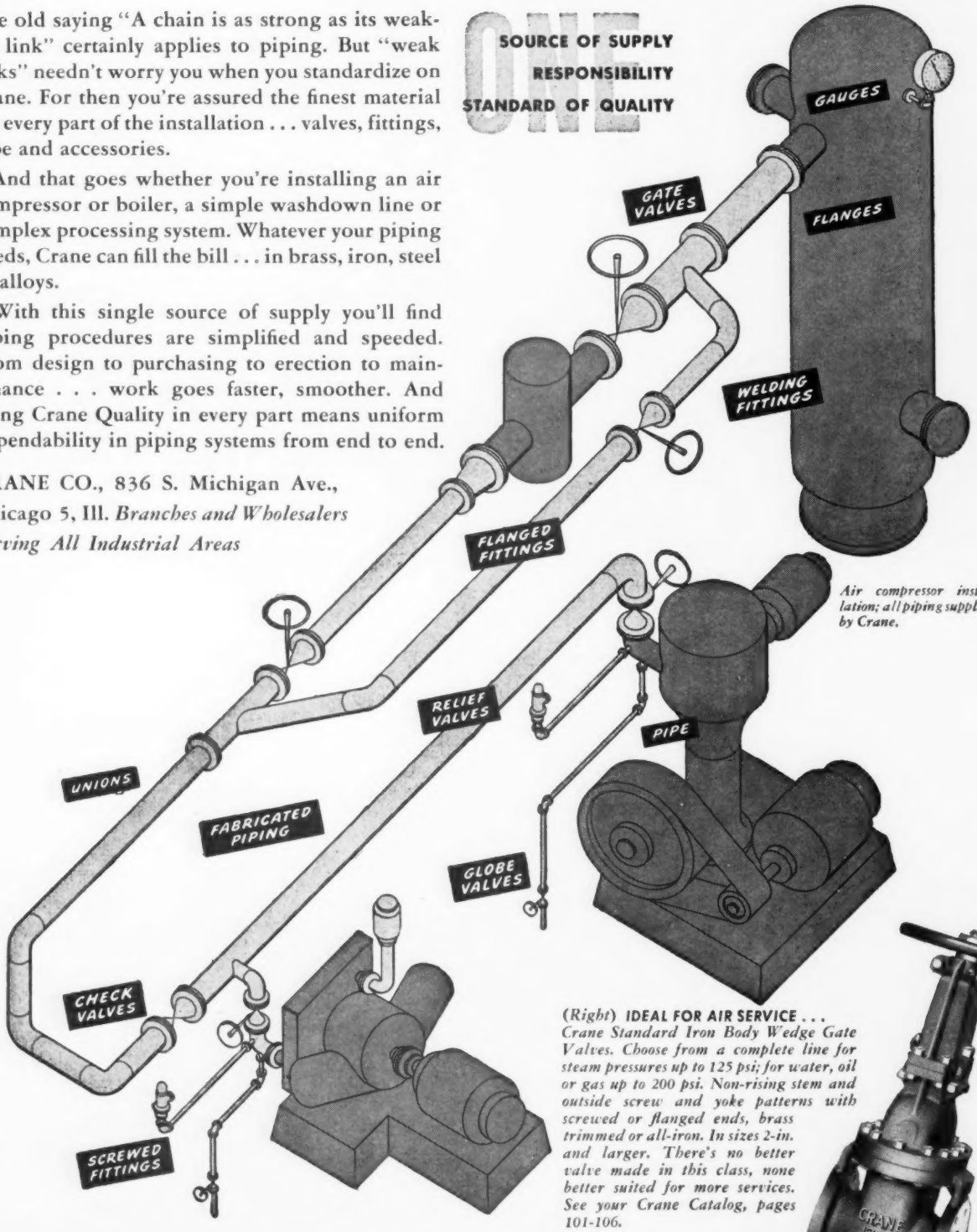
The old saying "A chain is as strong as its weakest link" certainly applies to piping. But "weak links" needn't worry you when you standardize on Crane. For then you're assured the finest material for every part of the installation . . . valves, fittings, pipe and accessories.

And that goes whether you're installing an air compressor or boiler, a simple washdown line or complex processing system. Whatever your piping needs, Crane can fill the bill . . . in brass, iron, steel or alloys.

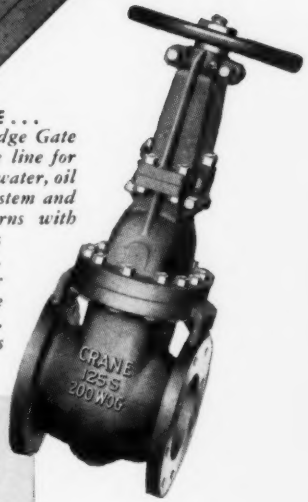
With this single source of supply you'll find piping procedures are simplified and speeded. From design to purchasing to erection to maintenance . . . work goes faster, smoother. And using Crane Quality in every part means uniform dependability in piping systems from end to end.

CRANE CO., 836 S. Michigan Ave., Chicago 5, Ill. *Branches and Wholesalers Serving All Industrial Areas*

ONE
SOURCE OF SUPPLY
RESPONSIBILITY
STANDARD OF QUALITY



Air compressor installation; all piping supplied by Crane.



(*Right*) **IDEAL FOR AIR SERVICE . . .** *Crane Standard Iron Body Wedge Gate Valves. Choose from a complete line for steam pressures up to 125 psi; for water, oil or gas up to 200 psi. Non-rising stem and outside screw and yoke patterns with screwed or flanged ends, brass trimmed or all-iron. In sizes 2-in. and larger. There's no better valve made in this class, none better suited for more services. See your Crane Catalog, pages 101-106.*

EVERYTHING FROM . . .

VALVES . FITTINGS
PIPE . PLUMBING
AND HEATING

CRANE

FOR EVERY PIPING SYSTEM

The last edition of our Hometown News

We always took the *Hometown News* for granted. The paper came out as regular as the seasons of the year, and sometimes a day late. But no one seemed to mind or notice much.

On Wednesday nights in the small shop on Main Street, you could see the lights from the shop burning brightly and Ben Jamison, the editor and publisher, standing up on the foot rest of the old press.

Sometimes on a summer night you could smell the wet ink and the trimmed newsprint as you passed the shop. The bang and clatter of the old flat bed press would echo dully up and down the street until early morning.

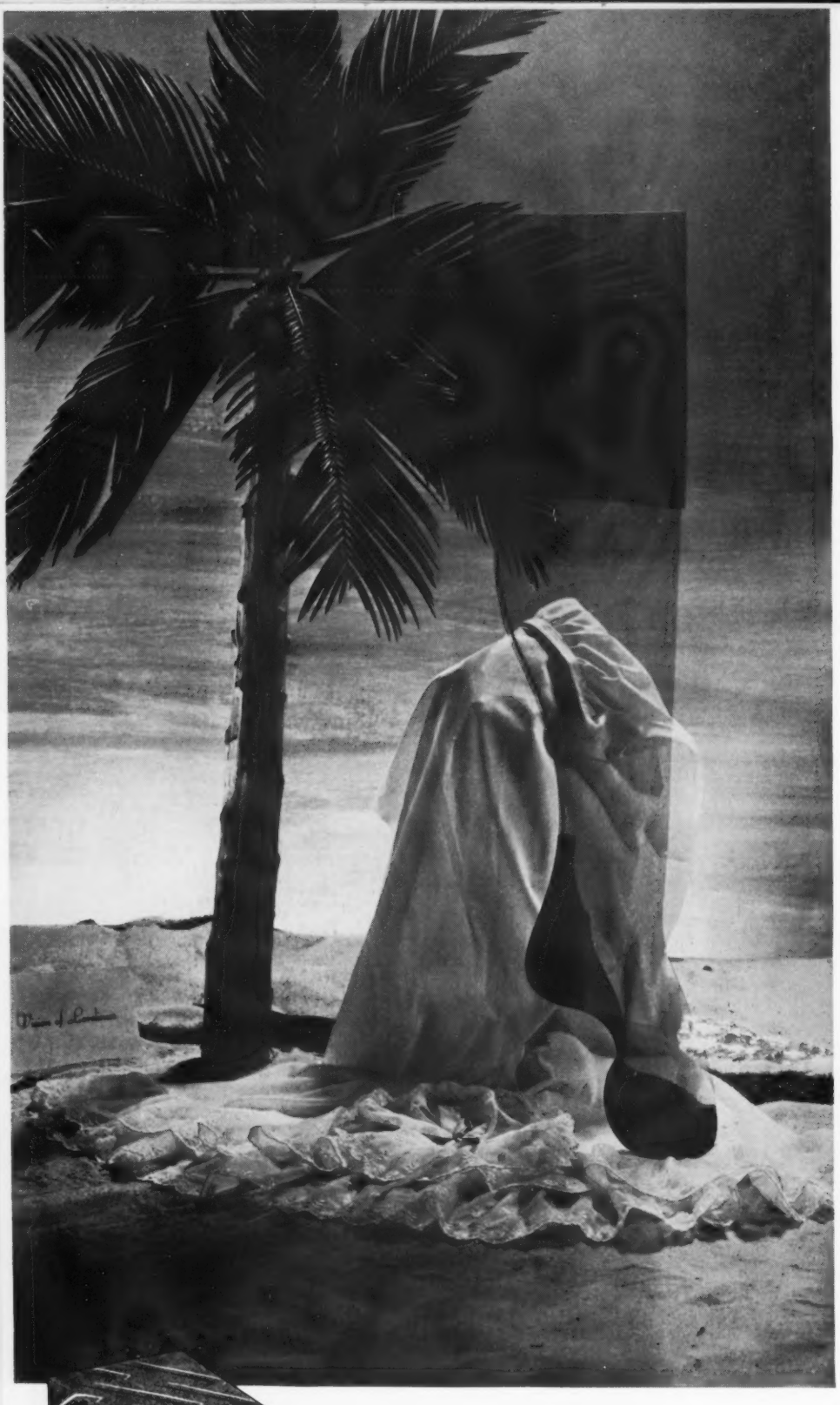
Then one day the story was on the front page. This was the final edition of the *Hometown News*. The old flat bed press had outlived its usefulness and needed replacement, but there wasn't any money available to buy new equipment. None had ever been set aside for this purpose. Ben had tried hard to borrow funds, but money was scarce then, and his attempts were unsuccessful.

Everyone was sorry to see the paper go, especially Ben Jamison.

Take a look at your last Financial Statement. Do you really have the money that you charged off for Depreciation in the past years? Is it part of your "current" assets . . . or is it earmarked as a separate fund under "fixed" assets?

Write today on your business stationery for your copy of "Good Housekeeping in Business" —a pamphlet which presents what we believe to be a *logical* basis for handling depreciation money. We will be glad to send it to you.

TEXTILE MACHINE WORKS
READING, PENNA.



Textile
SPRING-BEARD NEEDLES
For Full Fashioned and Warp Knitting

For perfect straightness

When you look at a Textile Spring-Beard Needle, you see perfect straightness of stem, side, back and beard. You see perfect spacing on knitting bars—perfect alignment of needle beards.

And Textile Needles remain straight and true . . . just one of the advantages of Textile's quality controls—automatic controls, electronic controls, controls that do not relax until the needles are in position in your knitting bars.

You'll see the results in more even stitches and improved knitting results.

TEXTILE MACHINE WORKS
Reading, Penna.

In today's new, faster, more efficient

textile mill equipment . . . *it's*

Stainless Steel construction

HAVE you noticed how generously Stainless Steel is used, and what a key role it is playing, in the high speed, mechanized equipment that's coming on the market?

It's not because Stainless is cheap—for it isn't. It's because Stainless does so much more, does it so much better and lasts so much longer that leading manufacturers and processors are building equipment of every kind with Stainless Steel in every vital part. They've found out that there's no better way to ensure optimum performance at minimum cost. They know that Stainless construction pays-off, BIG.

U·S·S Stainless Steel pays the *biggest* returns, for two reasons. First, this service-tested, *perfected* Stainless is available in a complete range of analyses to meet every variety of operating conditions. And, second, its uniformity in composition, in finish and in fabricating qualities allows the widest latitude in design and permits the use of the most advanced manufacturing techniques.

You will find the cooperation of our engineers invaluable in determining what type of U·S·S Stainless will do the best, most efficient job for you. Write for their assistance—outlining the problem you have in mind—to United States Steel Subsidiaries, Room 2045 Carnegie Building, Pittsburgh, Pa.

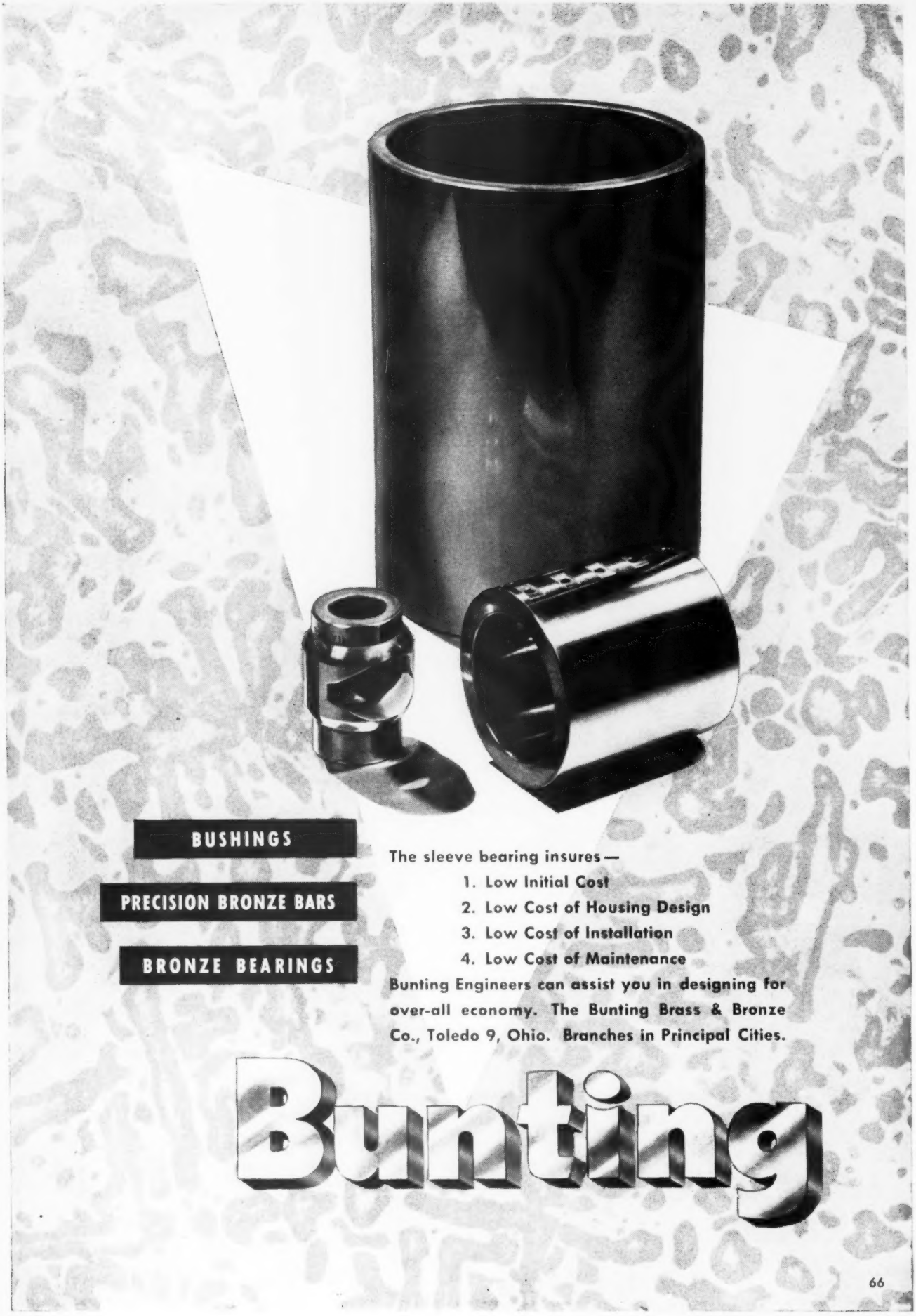
AMERICAN STEEL & WIRE COMPANY, GENERAL OFFICES: CLEVELAND, OHIO
CARNEGIE-ILLINOIS STEEL CORPORATION, PITTSBURGH & CHICAGO
COLUMBIA STEEL COMPANY, SAN FRANCISCO · NATIONAL TUBE COMPANY, PITTSBURGH
TENNESSEE COAL, IRON & RAILROAD COMPANY, BIRMINGHAM
UNITED STATES STEEL SUPPLY COMPANY, WAREHOUSE DISTRIBUTORS, COAST-TO-COAST
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

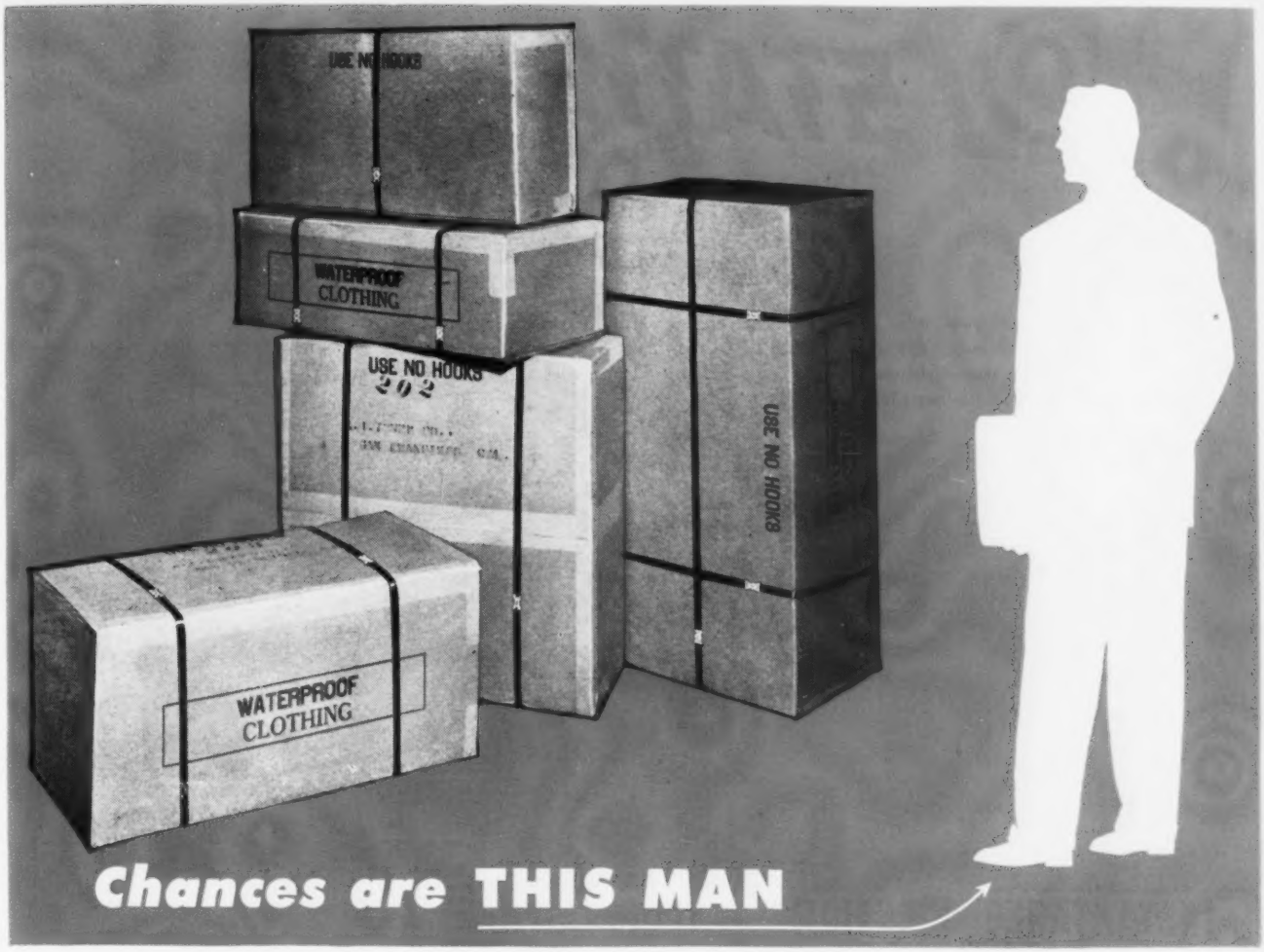
8-1177

U·S·S STAINLESS STEEL

SHEETS · STRIP · PLATES · BARS · BILLETS · PIPE · TUBES · WIRE · SPECIAL SECTIONS

UNITED STATES STEEL


BUSHINGS
PRECISION BRONZE BARS
BRONZE BEARINGS
The sleeve bearing insures—
1. Low Initial Cost
2. Low Cost of Housing Design
3. Low Cost of Installation
4. Low Cost of Maintenance
Bunting Engineers can assist you in designing for over-all economy. The Bunting Brass & Bronze Co., Toledo 9, Ohio. Branches in Principal Cities.
Bunting
66

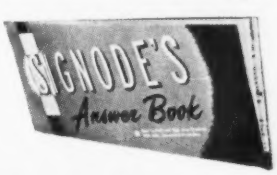


has *already* solved your shipping problem

Harassed by shipping losses . . . box breakage, carton damage, pilferage, customer complaints? Maybe it's time to call in a Signode packaging and shipping engineer.

In their years of experience . . . working with textile manufacturers as well as with all other product shippers . . . these packaging specialists have met and solved thousands of knotty problems, perhaps many of them similar to yours.

Regardless of what you ship—waterproof clothing, silk hosiery, wool combing or yard goods—a Signode representative will be glad to give you the benefit of his experience. For further information, and a copy of Signode's new "Answer Book," write today.



TURKISH MOOR TOWELS

SIGNODE SPECIAL LITHOGRAPHED SEALS

Illustration shows how your name and trade-mark can be lithographed on the seals you use—good advertising, good identification, good protection. Write for details.

SIGNODE STEEL STRAPPING COMPANY
2642 N. Western Ave., Chicago 47, Ill.

SIGNODE ®

STEEL STRAPPING PROTECTS YOUR SHIPMENTS AGAINST DAMAGE

KILL STATIC with Complete Safety

STATIC in textile mill routine is a costly nuisance. To maintain trouble-free and smooth speed production, static must be eliminated continuously and safely. Since 1904, thousands of mills the world over have been eliminating static with CHAPMAN equipment — efficiently, with complete safety, and at low cost

Obviously, there can be no "package" solution for static problems. CHAPMAN Static Eliminators are of several types, each of which is specifically designed to do its one job, and to do that job superlatively well — to KILL STATIC — whether at a single point or across any width of web.

THE CHAPMAN STATIC ELIMINATOR

INSTANTANEOUS ACTION — TROUBLE-FREE

Textile mills everywhere report to us that CHAPMAN Static Eliminators are speeding their production by eliminating static at the point where static causes trouble; on the condensers of wool carding sets; over doffer combs; on Peralta machines, nappers, dryers; in the drawing process of making worsted type yarns on the American or modified cotton system; on cotton type drawing frames handling cotton or wool and the various synthetics, either alone or in blended combinations; in high speed warping and slashing, and many other operations.

Proven Safety & Efficiency

CHAPMAN Static Eliminators are absolutely safe. Over 40 years of *actual, continual use under varying conditions* have proven this. No shielding or any precaution is needed to protect operators. Neither operators, State or other governments object to its use. CHAPMAN Static Eliminators are silent and instantaneous in action; reduce the need for excessive humidity; require a minimum of maintenance. Operating cost is so low as to be negligible.

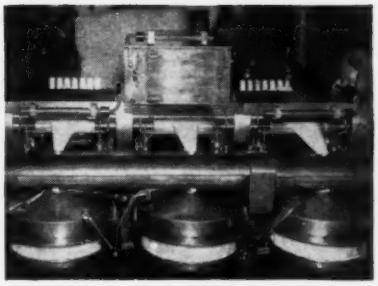
CHAPMAN STATIC ELIMINATORS ARE TESTED AND APPROVED BY THE UNDERWRITERS' LABORATORIES.

Chapman Engineering Service is available to you without obligation. Write us, and ask for your free copy of the CHAPMAN Handbook, Bulletin No. 66.

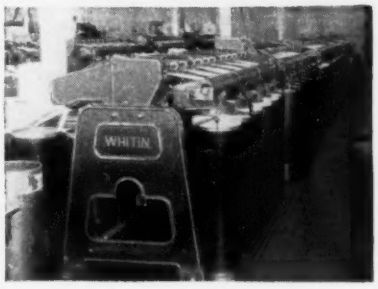
CHAPMAN ELECTRIC NEUTRALIZER COMPANY

ESTABLISHED 1904

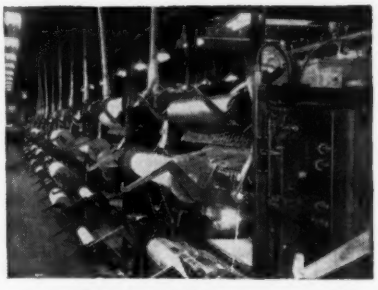
24-60 FORE ST., PORTLAND 6, MAINE



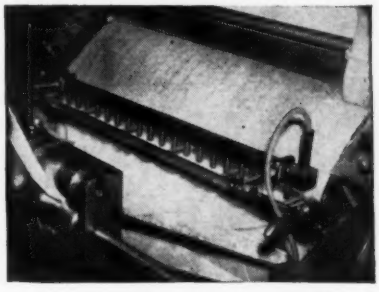
Three slivers in a line of drawing — equipped with CHAPMAN Neutralizers. One clearer cover is raised.



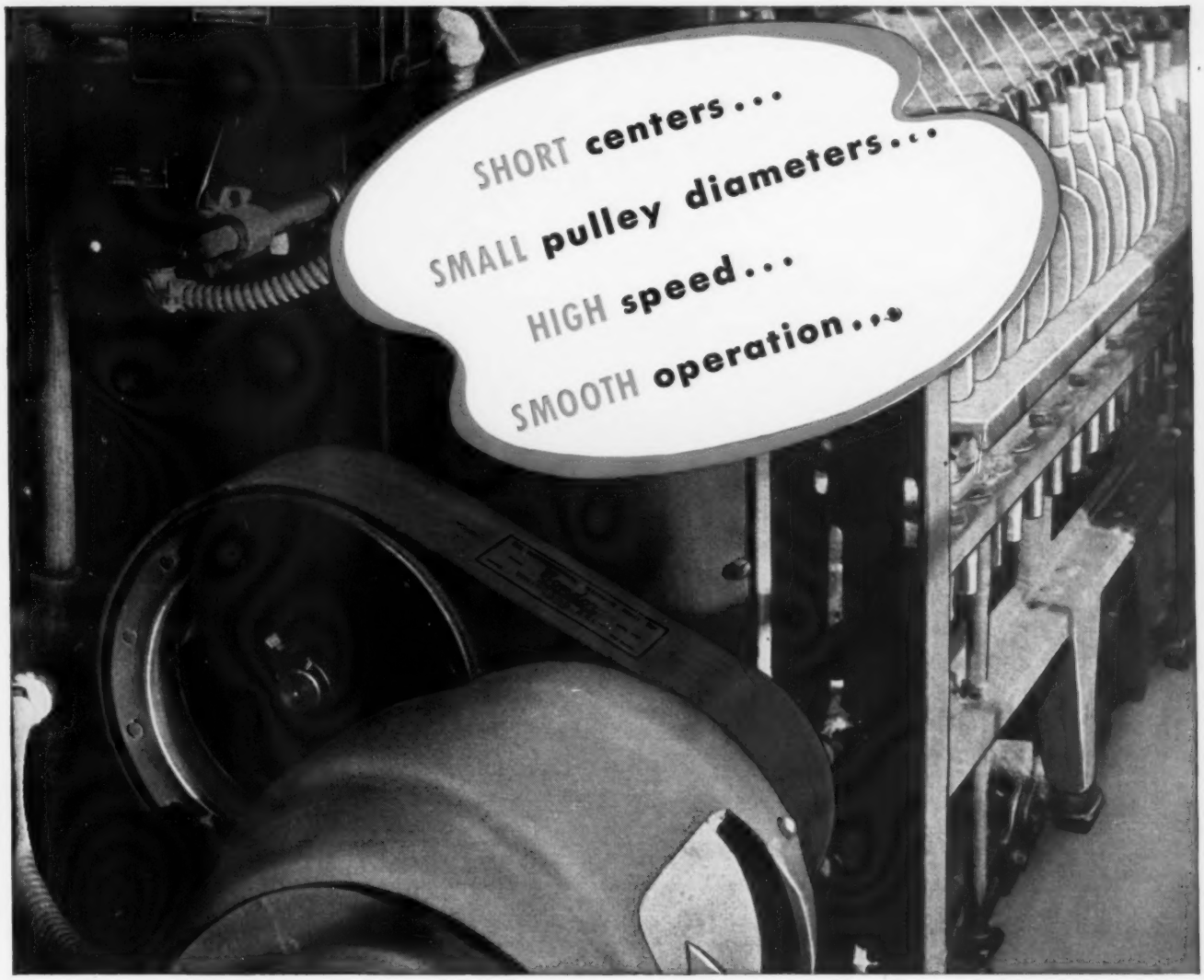
Two lines of drawing, running blends containing wool, acetate rayon, etc. Equipped with CHAPMAN Neutralizers, insuring full production.



Line of Tape Condensers in a woolen mill, all equipped with CHAPMAN Neutralizers of the individual type.



A close-up view of a cotton card fitted with a CHAPMAN Neutralizer.



All these call for *Condor* WHIPCORD Endless Belts

A flat transmission belt on a drive like this spins around so fast, its life is one continuous "flex". With no straight stretches for a "breather" or slack period, every ounce of this short center belt is under constant load. Only a belt with no plies to separate, no splices to part, can deliver the service needed.

Manhattan belting engineers designed the Condor Whipcord Endless Belt construction to resist just such *destruction*. Stout Whipcords are endless wound and locked in a matrix of Flexlastics by a method that prestretches the belt during manufacture. This insures against inelastic stretch and constant take-up maintenance. Power delivery is positive and constant with a Condor Whipcord Endless Belt.

More than this, Manhattan engineers developed the patented Extensible-Tip cover end-splice that prolongs belt life 3 to 10 times. The cover cannot separate despite constant flexing over the pulleys.

Obtainable in several driving surfaces for special conditions and also in Non-Spark, Oil-Proof types. Manhattan is always ahead in the development of belting. Condor Belts — Compensated, Whipcord Endless, or V-Belts — are always your best buy for long service.

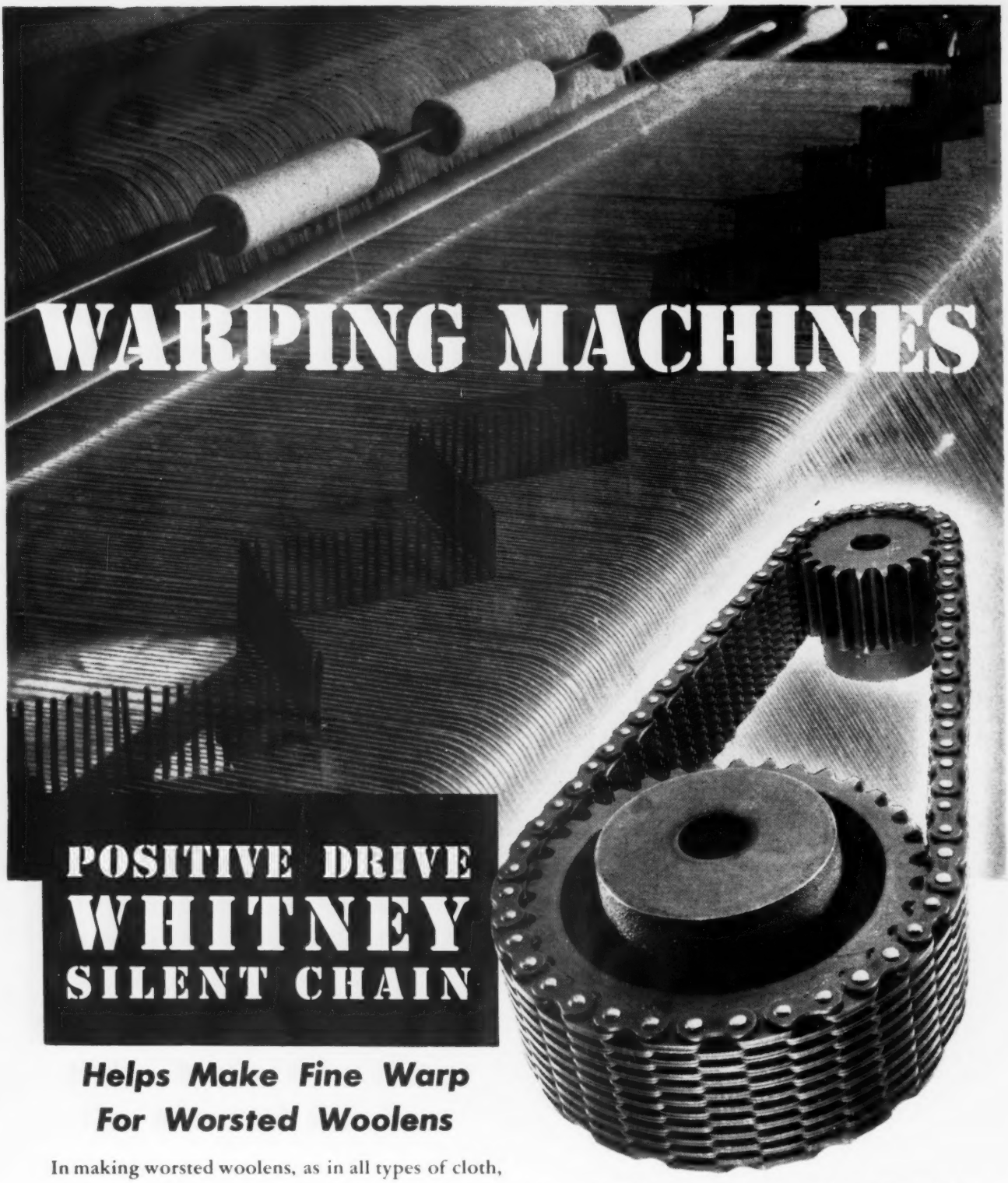
("Flexlastics" is exclusive with Manhattan)

RAYBESTOS R M MANHATTAN

RAYBESTOS-MANHATTAN INC.

Keep Ahead with Manhattan

MANHATTAN RUBBER DIVISION **PASSAIC, NEW JERSEY**



POSITIVE DRIVE WHITNEY SILENT CHAIN

Helps Make Fine Warp For Worsted Woolens

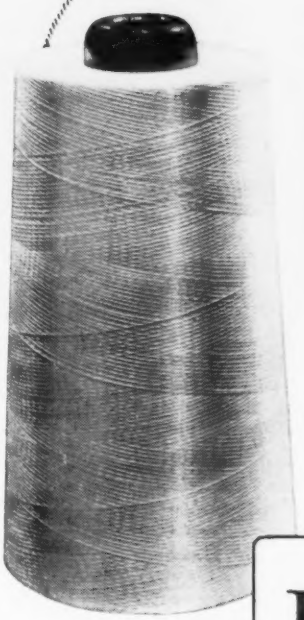
In making worsted woolens, as in all types of cloth, constant machine speed is a must for product uniformity. Whitney Silent Chain Drives help you get and maintain high quality by transmitting smooth, never-varying power from driver to driven elements. Firmly seated in sprockets, these chains deliver full power without slippage. Their positive grip means that your machines will run at full rated speeds, thus assuring maximum production. They are easily installed or dismantled . . . give years of quiet operating life with minimum time out for maintenance. If you are a manufacturer or user of textile machinery, it will pay you to investigate Whitney Chains and Cut Tooth Sprockets . . . the *all Steel Drives.* Write for complete information today.

Whitney Chain & Mfg. Co.
DIVISION OF WHITNEY-HANSON INDUSTRIES, INC.
211 Hamilton Street, Hartford 2, Conn.

FIBERGLAS* YARNS

provide Textile Designers and Manufacturers with a unique combination of advantages not present in any other yarn!

- HIGH TENSILE STRENGTH
- DIMENSIONAL STABILITY
- NONCOMBUSTIBILITY
- RESISTANCE TO OILS AND ACIDS
- RESISTANCE TO MILDEW AND ROT
- EXCELLENT ELECTRICAL PROPERTIES



Designing a fabric that requires dimensional stability as well as high tensile strength? Weaving a fabric that must resist oils and acids—that won't support combustion? If you are, it will pay you to investigate Fiberglas Yarns because, basically, they possess all of these characteristics . . . making them a natural to help you solve your problems. Yes, with Fiberglas Yarns you can design and produce a fabric that combines dimensional stability with high tensile strength. Further than that, this fabric will also offer resistance to oils and most acids, mildew and rot . . . and won't support combustion.

These yarns also can be woven in combination with other fibers such as cotton, rayon, asbestos, etc. They provide the opportunity for designers, weavers, manufacturers and retailers to produce and promote new and unusual fabrics.

Information on types and sizes of Fiberglas Yarns and other technical information is available from the Fiberglas Textile Div., 16 East 56 St., New York 22, N.Y.

TO WORK WITH YOU: A fully equipped Customer Service and Processing Laboratory is located at our Fiberglas plant in Ashton, Rhode Island. In co-operation with weaving mills and cloth processors, work will be carried on in this laboratory to help you develop suitable applications for glass yarns and fabrics. Process development activities and weaving experiments are also conducted at this plant.

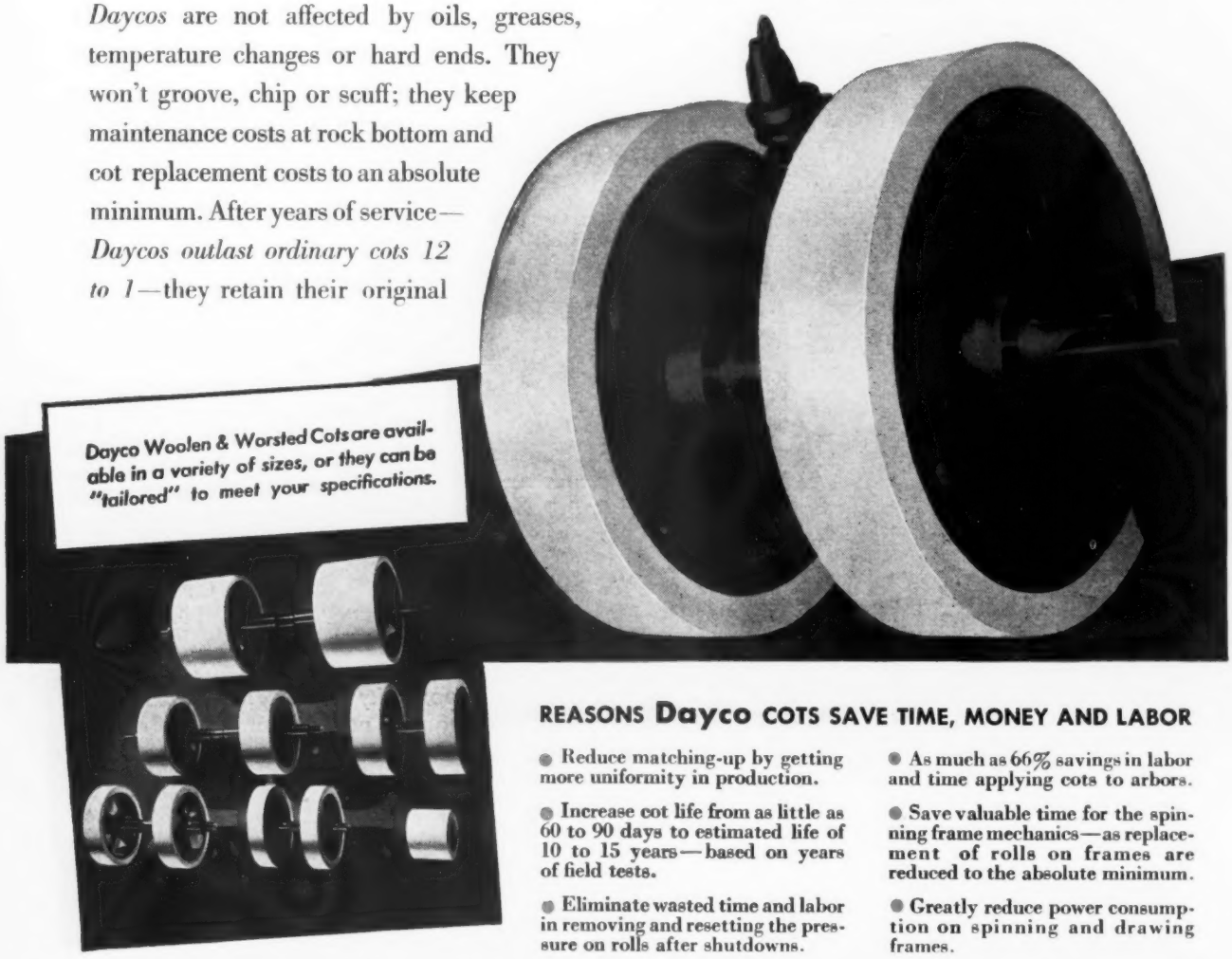
In Canada: Fiberglas Canada Ltd., Toronto, Ontario

OWENS-CORNING
FIBERGLAS
Yarns

*Fiberglas is the trade mark (Reg. U. S. Pat. Off.) for a variety of products made of or with glass fibers by Owens-Corning Fiberglas Corporation.

YOU'LL SPIN *more uniform yarn* AT LESS COST WITH *Dayco* WORSTED COTS

Specially designed and built for their specific job, *Daycos* can't be beat to run all combinations of wool, rayon or mohair mixtures with less matching-up and fewer ends down. Production records from mill after mill prove *Dayco*-equipped frames consistently deliver the most uniform yarn at the lowest cost. Manufactured without laps or splices, *Daycos* are not affected by oils, greases, temperature changes or hard ends. They won't groove, chip or scuff; they keep maintenance costs at rock bottom and cot replacement costs to an absolute minimum. After years of service—*Daycos outlast ordinary cots 12 to 1*—they retain their original co-efficient of friction and resiliency and show no signs of grooving or other deterioration. A trial installation will convince you *Daycos* are your answer to lowest production costs and highest spinning room efficiencies. It will pay you to write today to *The Dayton Rubber Company, Textile Division, Woodside Building, Greenville, S. C.*



REASONS Dayco COTS SAVE TIME, MONEY AND LABOR

- Reduce matching-up by getting more uniformity in production.
- Increase cot life from as little as 60 to 90 days to estimated life of 10 to 15 years—based on years of field tests.
- Eliminate wasted time and labor in removing and resetting the pressure on rolls after shutdowns.
- As much as 66% savings in labor and time applying cots to arbors.
- Save valuable time for the spinning frame mechanics—as replacement of rolls on frames are reduced to the absolute minimum.
- Greatly reduce power consumption on spinning and drawing frames.

Dayton Rubber

THE MARK OF TECHNICAL EXCELLENCE IN NATURAL AND SYNTHETIC RUBBER

Du Pont Announces New Synthetic — ORLON

HIGHLIGHTS: Continuous-filament yarn has been in limited production as Fiber A — Speculation that plant at Camden, S. C., will produce it — Properties place it between nylon and rayon — Excellent resistance to sunlight — Easily slashed — Acetate, basic, and some vat dyes can be used — Good strength and elongation — Can be creped.

Some Ultimate Uses for Orlon

INDUSTRIAL

Automobile tops	Dye machine covers
Filter cloth, acid	Laundry nets and bags
Dust collection bags	Flags
Cordage	Sewing thread
Sails	Diaphragms
Fish nets	Electrical insulation
Leader cloths	Laminations

CLOTHING

Tricot fabrics	Linings
Men's shirts	Knit underwear
Rainwear	Protective clothing
Umbrellas	Bathing suits
Resist yarn	Sport shirts

HOME FURNISHING

Curtains	Awnings
Window shades	Outdoor furnishing

The many industrial uses foreseen for Orlon make its announcement timely in this issue of TEXTILE WORLD.

ORLON, formerly called Fiber A, is the name given by Du Pont to the acrylic yarn it is producing in small quantities (at its Waynesboro, Va., plant). Large-scale production is rumored as planned for Du Pont's projected plant at Camden, S. C.

Orlon is technically a polyacrylonitrile fiber, commonly called acrylic. Its properties (see table) taken together place it between nylon and rayon. Work on it was begun in 1940, and for several years laboratory and pilot-plant production has been used to explore the possibilities of the new fiber in continuous-filament form. Yarn sizes from 30 to 600 den. have been produced. Filaments range from 1 to 5 den.

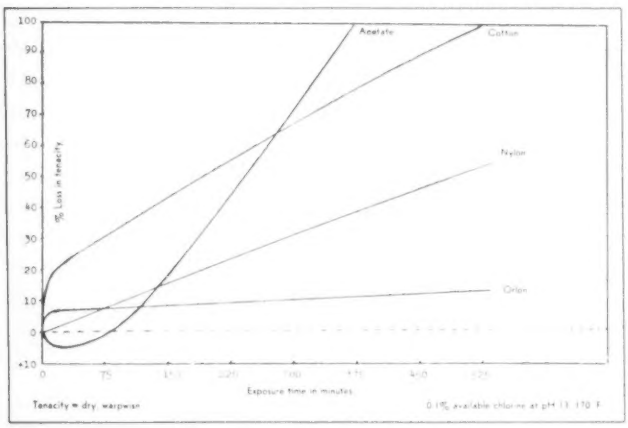
The new fiber can be used on conventional equipment for winding, twisting, knitting, slashing, weaving, braiding, dyeing, and finishing. It can be creped despite its low water take-up. Regular slasher sizing, using gelatin, is feasible, although generally less gelatin is required than is needed for acetate rayon.

DYEING. Orlon yarn and fabrics can be dyed with acetate, basic, and some vat dyes. They are reported more difficult to dye than some conventional fabrics; but once dyed, good fastness can be expected. Acetate colors on Orlon do not fume-fade. A short bath

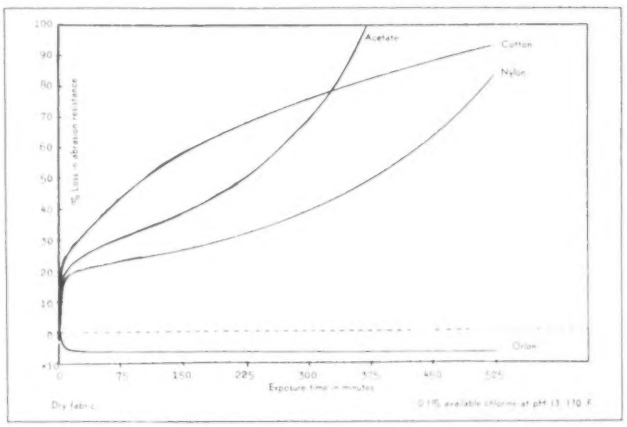
PROPERTIES OF ORLON

Cross-section	Dogbone
Tensile strength (g.p.d.)	Std. 4.5 Wet 4.3 Loop 3.8
Elongation (%)	Std. 20 Wet 19 Loop 16
Elastic recovery (%)	98 at 2% 85 at 4%
Specific gravity	1.17
Regain (60% r.h.)	0.9 to 2%
Water absorbency	2 to 3%
Effect of heat	Effect on strength at 25° C. 137.5% at —40° C. 83.5% at 75° C. 73.3% at 100° C. 67.0% at 125° C. 51.0% at 150° C. No impairment to strength after one month in air at 125° C. Yellows on prolonged heating at 110° C. Burning rate similar to rayon. Sticking temperature 190 to 220° C.
Effect of age	None
Effect of sunlight	Superior resistance
Effect of acids	Good to excellent resistance to mineral acids
Effect of alkalis	Fair to good resistance to weak alkalis
Effect of other chemicals	Not harmed by greases, oils, neutral salts, or most acid salts Chlorine bleach degrades very little.
Effect of organic solvents	Not harmed by common solvents
Dyes used	Acetate, basic, vat
Resistance to moths	Wholly
Resistance to mildew	Wholly
Impact strength (gm. cm./den.)	11.5
Stretch resistance (1.5% elong.)	Std. 0.88 g.p.d. Wet 0.46 g.p.d.
Flex life	Very high
Abrasion resistance (yarn)	500 cycles (Viscose 400, acetate 90, nylon 32,000)
(5-oz. fabric)	**Taber** — 864 cycles (Viscose 630, acetate 220, nylon 4,940) **Wyzenbeck** — 17,250 (Viscose 11,285, acetate 408, nylon 120,000)
Shrinkage in boiling water	0 to 2.5%
Toxicological action	Non-hazardous No dermatitis Combustion products no more harmful than from silk or wool

Fiber property data given here can be kept with TEXTILE WORLD's 1947 Synthetic Fiber Table.



Effect of Bleaching on Tenacity



Effect of Bleaching on Abrasion Resistance

(50:1) is used at the boil for 1 to 2 hr. Chlorine bleaching has but very little weakening effect on Orlon.

Acetate, basic, and some vat colors can be padded on, followed by drying and cottage steaming to obtain medium to deep shades. Basic colors are more light-fast on Orlon than on conventional fibers.

Printing can be done along the general lines given for pad dyeing.

Finishing, including application of durable water-repellents, can generally be done as with other synthetics. Orlon's resistance to moisture and its excellent resistance to exposure make it a good candidate for water-repellent treatments.

Hot framing, hot-roll, or other heat treatments give Orlon fabrics increased resistance to wrinkling. Heat also improves shrinkage of tricot fabrics, sheers, and marquisettes, although in most fabrics heat treatment is not needed to achieve a satisfactory finish.

Crush-resistant pile fabrics can be made using Orlon. Suitable fabrics can be bonded with resins or rubber with conventional procedures.

Static can be controlled by use of antistatic agents or, in processing, by electrical static eliminators.

Fabrics produced have a warm, dry feel. Drape depends on fineness of filaments, fabric construction, and finishing.

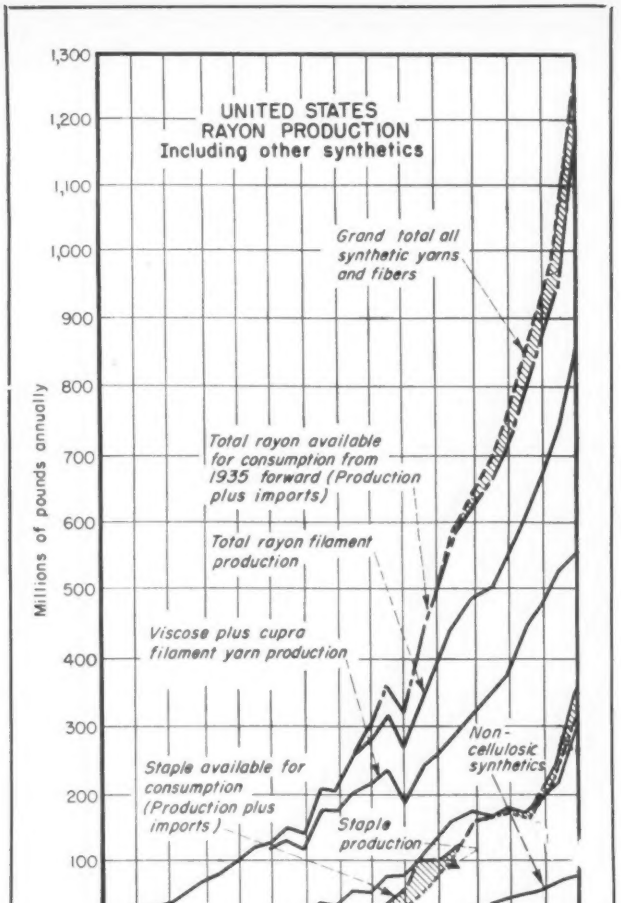
1948 RAYON GAIN Large But 1949 Will Be Small

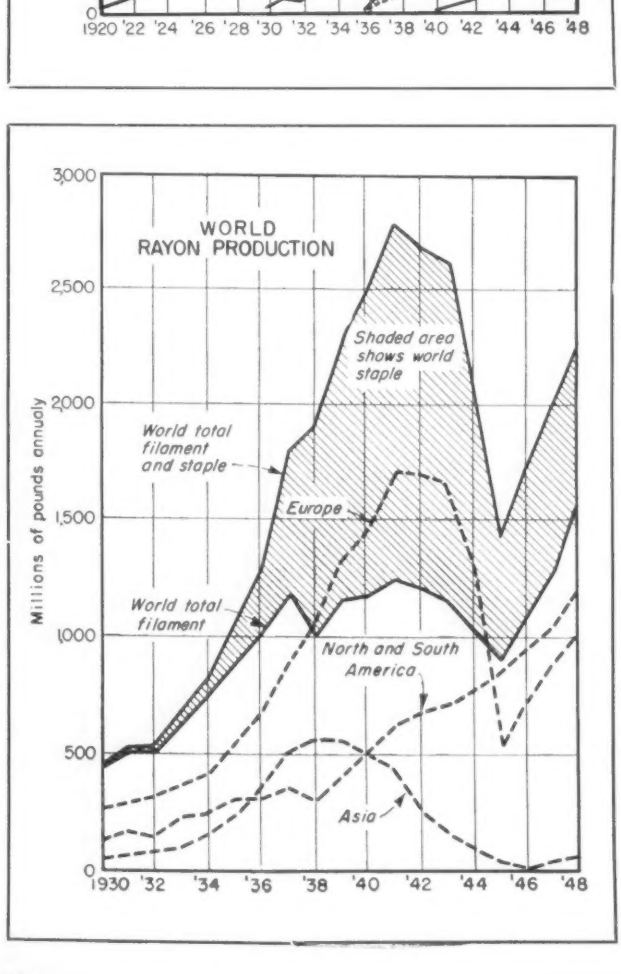
HIGHLIGHTS: Most of postwar expansion in U. S. has been realized and production gain this year over last will be about 18%—New capacity in sight for 1949 inadequate for growing demand—U. S. total for all synthetics this year should exceed 1,288,000,000 lb.—Viscose filament has largest poundage gain; acetate filament, largest percentage gain—World production in 1948 may top 2,280,000,000 lb., with England, Italy, France, and Germany following U. S.—Activity increases in nylon and other new fibers, but they are still small in volume compared to total rayons.

By **WILLIAM B. DALL**
Managing Editor, TEXTILE WORLD

PUT INTO HUMAN TERMS, the year 1948 has been one of realization in the U. S. rayon field rather than one of expectant planning. Realization of much of the immediate postwar expansion has upped filament and staple production 18% over 1947. Realization of rayon's virtues in fabrics is raising rayon woven broad-goods production about 20% in the same period. Realization of the possibilities of the American market has increased imports. These gains represent new high records in each of these three cases.

NEW CAPACITY SMALL. Absence of the hopeful planning of 1946 and 1947, however, leaves the primary





PRODUCTION OF ITEMS MADE FROM RAYON

(In first quarter of years 1944, 1945, 1946, 1947, 1948)

BROAD-WOVEN GOODS—1,000s of yd.	1944 (1st quarter)	1945 (1st quarter)	1946 (1st quarter)	1947 (1st quarter)	1948 (1st quarter)
Total rayon broad-woven goods	422,604	416,405	433,551	462,579	537,900
100% filament-rayon fabrics	294,541	275,971	269,044	287,547	338,383
Bright viscose taffetas	12,762	9,640	15,025	11,224	15,683
Pigment viscose taffetas	22,501	21,668	22,395	20,261	28,823
Acetate taffetas	23,327	21,454	21,510	18,303	21,043
Cross-dyed taffetas	5,370	5,060	6,884	4,184	2,914
Twills and serges	34,890	29,290	29,041	38,675	43,411
Satins	38,511	40,837	39,053	40,130	42,957
Flat, canton crepes: failles	22,147	19,218	22,175	23,132	34,298
French crepes	19,602	21,761	23,219	29,191	33,561
Marquisettes	10,649	11,139	12,116	15,209	13,182
Ninons and voiles	9,579	9,537	11,006	11,357	8,609
Combination crepes	40,657	36,398	38,899	38,676	44,290
All other, incl. sheers	48,672	44,128	16,802	31,705	37,103
100% spun-rayon fabrics	42,605	44,016	49,958	50,891	98,424
Poplins, challis, bedford cords	7,647	7,652	7,068	4,767	11,176
Twills, serges, etc.	16,075	14,752	10,309	7,998	22,883
Linen types and flakes	5,901	7,040	7,680	5,297	8,167
Plied-yarn fabrics	4,873	4,975	7,184	14,615	18,221
All others	8,109	9,595	17,717	18,214	37,977
Filament and spun-rayon fabrics	38,049	40,841	46,792	48,367	48,984
Fujis	11,382	14,178	16,994	16,922	11,796
Shantungs	7,391	7,641	6,593	6,287	8,299
All other incl. poplins, failles	19,276	20,022	23,205	25,158	28,889
Mixtures (51% or more rayon)	37,466	40,891	57,559	63,832	39,848
Rayon and wool	6,306	6,644	7,591	10,336	9,124
Rayon and cotton	23,240	22,143	36,097	40,129	25,980
Rayon and other fibers	7,920	12,104	13,871	13,347	4,744
Pile, upholstery, drapery, tie fabrics	6,982	8,176	10,198	11,942	12,261
Nylon, glass, and other fibers	24,000	6,000	5,403	17,647	16,680
HOSIERY — 1,000s of doz. prs.					
Women's full-fash., rayon	8,818	9,147	3,332	2,009	380
Women's full-fash., nylon	.....	.....	6,360	7,310	12,150
Women's seamless, rayon	1,838	1,090	918	1,069	470
Women's seamless, nylon	.....	.....	552	866	955
Half-hose and slack socks	2,400	2,230	3,330	3,700	4,300

CONSUMPTION OF RAYON

(Filament, except where specified under broad-woven goods)

	1944 (1st quarter)	1945 (1st quarter)	1946 (1st quarter)	1947 (1st quarter)	1948 (1st quarter)
	(in 1,000s of lb.)				
Broad-woven goods—					
Filament	74,600	72,300	82,700	90,800	106,000
Spun	.....	25,771	29,882	31,864	50,833
Blends and mixtures	.....	4,826	10,226	14,930	11,934
Tire cord and fabric	21,100	43,000	53,400	55,800	57,700
Narrow-woven goods	3,600	4,300	3,300	3,300	3,500
Miscellaneous uses	5,300	3,500	3,400	4,800	4,500
Exports	2,600	5,700	3,300	3,500	4,400
Hoisery—full-fashioned	8,000	6,900	2,100	1,200	200
—seamless	3,600	2,700	3,900	4,400	4,300
Other knit goods—circular	7,200	7,000	7,800	8,500	9,200
—warp knit	7,000	6,600	8,700	9,800	11,700

Figures are from WPB, CPA, "Rayon Organon," Dept. of Commerce.

producers of rayon and most other synthetics with a smaller prospective increase in capacity now than for many years. Actually, as this is written, there is one new viscose plant under construction, another one in sight, one acetate plant starting up this fall, one enterprise for a new non-cellulosic synthetic on the drawing board, and several small pilot-plant propositions in operation for possible development later on. The total added poundage for 1949 may be about 50,000,000 lb. as a result of these and other enterprises, which compares unfavorably with the 1948 gain of possibly 200,000,000 lb. Since "free" rayon from importers or the "second-hand" market still commands over twice the price from U. S. producers, it is obvious that real scarcity persists. Certainly the production expansion in sight in this country is inadequate to level off the tight situation in light of the superficial facts.

Partial cause of the American sluggishness to plan new capactiy is undoubtedly the high cost of buildings and machinery. When new plants could be written off in the foreseeable future, there was less resistance to investment in added capacity than when such amortization runs into the doubtful years of the middle and later 1950s.

Another cause of American hesitation is the notable increase in rayon production abroad which may build up an import volume into this country which, when added to domestic output, may satisfy the cravings of weavers and knitters. The U. S. market is vulnerable to foreign exploitation because of the great need for dollar exchange abroad, because of the extravagant "gray" market prices generally current, and because the foreign makers are using abnormally low-paid workers in comparison with the wage levels reached here since the war.

This summer, observers have detected a sluggishness of "gray" market operations that suggest a possible turn in the previous invulnerably strong trend. Rayon which moves from the producer at 75¢ per lb. has lately brought only $1.50 instead of the previous $2.00 in second-hand transactions. Also, there are said to be evidences of accumulations in mills of the coarser deniers (350 to 900 den.) of filament textile rayon and some grades of staple. Demand for tire yarn (1100, 1650, and 2200 den.) continues strong. There is clearly keener selection being exercised among users now than in previous months when anything went.

If the American rayon field were filled with new projects coming into production next year, rayon mill owners might well be spending sleepless nights. As it stands, however, the potential output gain in 1949 is so small that more imports and a softening in demand could be brushed off harmlessly for a considerable period. Actually, any further import increase may be more of a threat than a reality, for it would not be an easy matter to match a domestic 75¢ yarn with a foreign yarn at the same figure. While the "free" or second-hand market hovers around $1.50 for that item, importers obviously have gravy that will disappear as domestic demand is more nearly matched to domestic yarn and fiber production and as price premiums decline or disappear.

BIG GAIN THIS YEAR. Based on the first half of the year, it is likely that 1948 domestic production of all synthetic fibers will top 1,288,000,000 lb., a gain of 19% over 1947. This marks a new high for the U. S. and an unusually great percentage gain for one year. This figure continues synthetics above all other fibers in this country except cotton, and keeps the U. S. well above any other nation in the world in synthetic-fiber production. No other country has ever exceeded the billion-pound mark, and we crossed it last year. England and Italy are competing for second place in annual volume with neither of them just now exceeding 20% of the American output.

Rayon in all its forms should total slightly over 1,200,000,000 lb. in 1948 U. S. production, a gain of 18%. Subdivisions show the following gains: viscose plus cuprammonium filament, 6%; acetate filament, 35%; staple, 34%. Viscose filament this year should approach 558,000,000 lb., acetate filament 299,000,000 lb., and all staple 306,000,000 lb. Based on January-to-April figures, imports of staple may reach 45,000,000 lb. this year and imports of filament may reach 15,000,000 lb. The latter is a new development and is the first consequential importation of filament rayon for nearly 20 years. Last year, for example, total filament-rayon imports reached the insignificant sum of 242,000 lb. For the first four months of this year, they exceeded 4,000,000 lb.

Rayon and other synthetic-yarn exports from the U. S. last year were 63% over 1946 and totaled 28,485,000 lb.; similarly exports of staple and waste were up 18% to a total of 5,434,000 lb.

Exportation of rayon fabrics in 1947 was nearly twice the 1946 figure and exceeded 12% of the domestic production in that year. Without available poundage figures on fabric imports, it appears from the foregoing that a greater weight of rayon has been leaving the country than has been coming into it.

It is noteworthy that acetate filament yarn in 1949 will probably equal or surpass viscose textile filament yarn (total less tire-cord yarn).

WORLD PRODUCTION. Estimates by *Rayon Organon* place total world production of rayon in 1947 at 1,990,000,000 lb., a gain of 19% over 1946. It will be noted that U. S. production is slightly over one half of this. In other words, this country has been making more than all the rest of the world put together. This will continue in 1948, but the rest of the world may catch up with Uncle Sam in 1949. We estimate world production this year to be up about 14% to something approaching 2,280,000,000 lb. World capacity at end of 1948 will be over 3,000,000,000 lb.

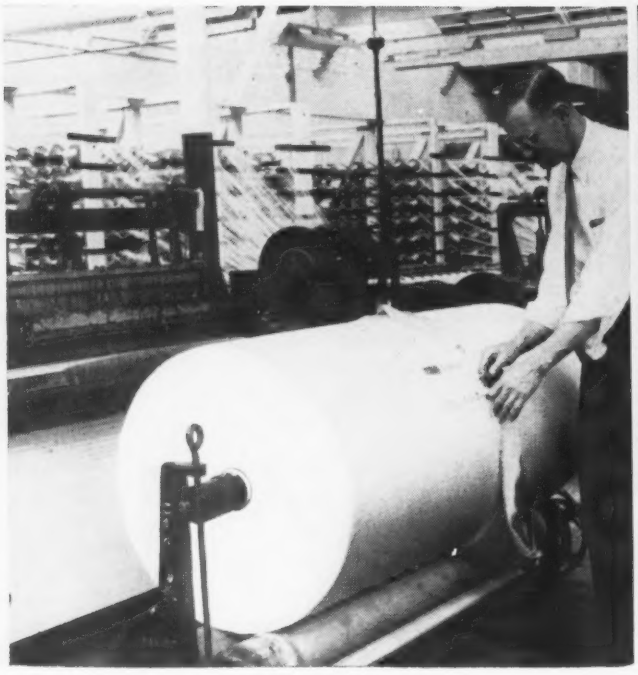
World filament production was 1,311,000,000 lb. in 1947 and should touch 1,578,000,000 lb. in 1948. The U. S. accounts for 54% of this. World staple production was 679,000,000 lb. in 1947 and should exceed 700,000,000 in 1948. The U. S. accounts for 43% of this. England, with about 200,000,000 lb. of filament and staple, now exceeds her best previous year. Italy a close second, has returned to only about 42% of 1941, her top year. France is third with production exceeding her best previous year. Germany is next in line with something over 100,000,000 lb., which is only 12% of her best year in 1943.

Germany's capacity, based on active and repairable plants, as estimated by *Rayon Organon*, is 442,000,000 lb. which is over four times the production of 106,400,000 lb. realized in 1947. Division of capacity by German zones is as follows: 38% in Soviet zone, 30% in British zone, 24% in American zone, and 8% in French zone. The Soviet zone is heavily weighted on staple, containing nearly half of German potential on that item, while it is the smallest of the four zones in filament production.

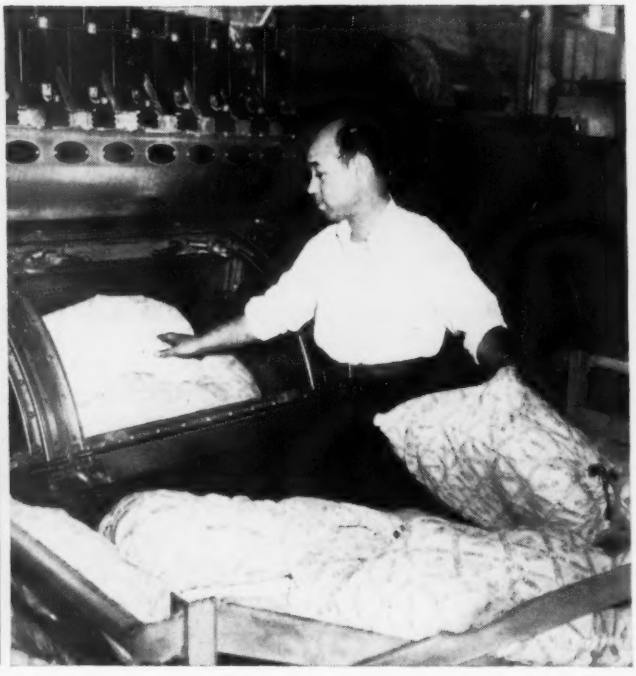
Asia is a disappointment to those who like large figures, since Japan is gaining slowly and will probably not exceed 100,000,000 lb. for another year. Her 1948 output will be barely 10% of her best year in 1938. China has one plant in progress and India has three. Palestine may eventually get one and India perhaps four more.

Since 1938, Chile, Colombia, Cuba, Egypt, Mexico, and Peru have been added to the rayon-producing countries of the world; and India, China, Australia, and Palestine may join those ranks in 1949. Actually, total over-

(*Continued on page 304*)



Rayon tire cord



Nylon laundry bags

INDUSTRIAL Uses of Synthetics

HIGHLIGHTS: Tire-cord poundage towers over all other—Many applications found in filters and for insulation—Bonded webs may develop to large volume—Special properties generally determine suitability—About one-fourth of synthetic fibers now for industrial uses.

By C. W. BENDIGO
Editor, TEXTILE WORLD

INDUSTRIAL USES of synthetic fibers, yarns, and fabrics account for about one-fourth of the total U. S. production. Tire cord (235,000,000 lb.) leads by a ratio of about 10 to 1 over all other industrial.

In the sections which follow are listed industrial uses to which the various synthetics are being put. New items are constantly being added. The lists, undoubtedly, would be longer today if more fiber were available for such uses.

Textile mills and synthetic-fiber producers are coming to the realization of the full significance of the market for their product in industrial uses. Both groups now have organizations to survey the possibilities of and to develop specific uses for rayon, nylon, glass fibers, vinylidine chloride, Vinyon, and other fibers, some of which are still not commercially produced.

Synthetics are admirably suited for industrial uses, especially where definite specifications can be laid down for the textiles needed. Producers can spin fibers and filaments with particular properties wanted, in most cases, if the type of fiber is not already in production. In their development work, the fiber producers are looking far ahead—many uses have already been developed even though not enough fiber is available to fill them.

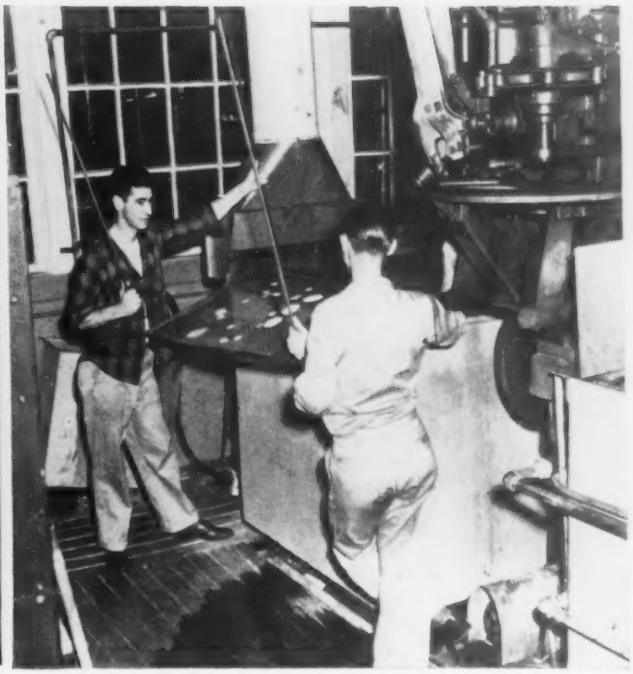
Many textile mills welcome the production of yarns and fabrics for industrial uses since, as one mill-man puts it, industrial customers are not so fickle. The fabrics are not so subject to fashion or whim, and yardages needed can be scheduled more accurately. In fact, some whole mills and many sections of other mills have been set up to run constantly on one type of industrial fabric.

TIRE CORD. Rayon and nylon tire cord constitute the best examples of industrial uses of synthetics. It is doubtful that any other industrial use will be found which compares in volume with tire cord. This market will continue to grow at the expense of cotton.

Success in tires has stimulated a host of other rubber and synthetic-yarn combinations which are listed in the following sections. In general, it can be said that in such cases use of rayon on nylon does one or more of these things: increases life or strength, reduces weight of materials needed, or cuts cost.

For a while, it was felt that cotton might recoup its tire-cord losses, but that possibility today is remote. It is not conceivable that the price of cotton will ever drop to a level that would give it an edge over rayon in tire-cord nor that it can give the performance being obtained with rayon or nylon. Technological advances in synthetic-cords and in tire manufacture based on these cords are

Glass-fiber insulation



Monofilament-screening carrier

Are Important and Growing

proceeding at a greater pace than are advances in cotton in the same field.

BONDED WEBS. One rayon producer foresees bonded webs as a large user of synthetic fibers. Some mills are already producing ever-increasing yardages of such fabrics as technical improvements are made and new outlets are found and developed. The bonded webs may cut into the market for woven and knit fabrics slightly, but none now being produced can do so.

It is encouraging to note that old-line textile companies are prominent in the manufacture of bonded webs. More details on webs are given in the section on viscose rayon.

Various forms of insulation are currently accounting for only a small part of the potential. Electrical insulation, in general, uses textile products; but thermal insulation usually utilizes bats that are not normally considered a textile-mill product. All together, insulation uses could equal tire-cord poundage; but the realization of such poundages would be of more interest to fiber producers than to textile mills.

Glass fibers are more important in the field of electrical and thermal insulation than are other synthetics.

Laminates and coated fabrics—both of which cover wide fields—are growing uses for synthetic fibers and fabrics. Often the production of bonded webs is for use in laminates.

Filter fabrics are extremely important users of synthetic fibers. Bonded webs and bats are also frequently used. The range of uses in filtering gases and liquids is so great that a complete listing of all such uses is almost impossible. In general, for such uses, one or more specific properties of the synthetics are utilized; for example, chemical resistance of Vinyon, nylon, Fiberglas, or saran (vinylidine chloride).

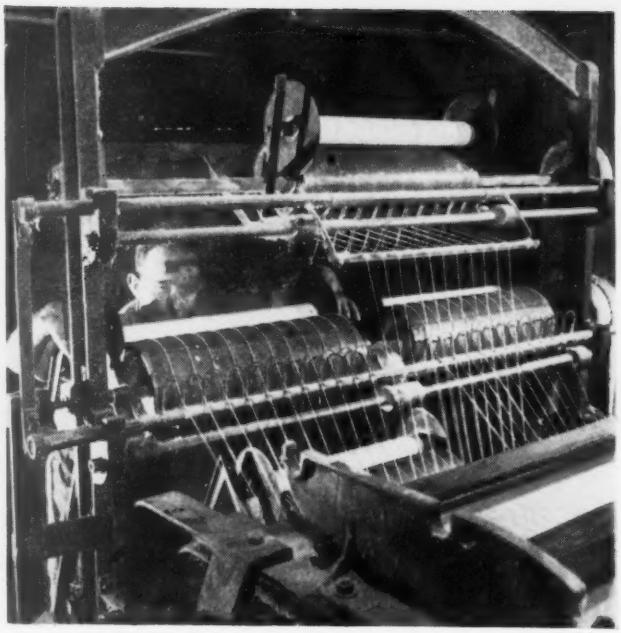
Most industrial fabrics do not need to be dyed and need not always be pleasing to the eye. Both factors ease manufacturing problems somewhat. Other problems, however, tend to offset these two—problems such as need for high strength, difficulty in tying knots, and prevention of contamination. The last item is most important in fabrics that are used as they come from the loom. Oil spots, for example, would keep rubber from adhering to tire-cord fabric or laminates from bonding properly. In some instances, ordinary slashing must be omitted.

Production of industrial fabrics usually entails meeting the user more than half way. It is necessary for the textile mill to understand the user's problems and to work out for him the particular textile product he needs. In some cases, regular products can be used, but in many instances a special type is needed. Also, the mill management must recognize that the market for most industrial products is quite small (main exception is tire cord, of course). A special staff for handling and developing industrial products will virtually always be necessary. Its main function, for the next few years at least, will be to find more and more new uses in industry. "Important and growing" best sums up the industrial uses of synthetic fibers, yarns, and fabric.

Military uses of synthetics are also growing. Nylon, during the war it will be recalled, was requisitioned by the military. This survey does not, however, attempt to go into such uses, although many items listed are usable by the military.

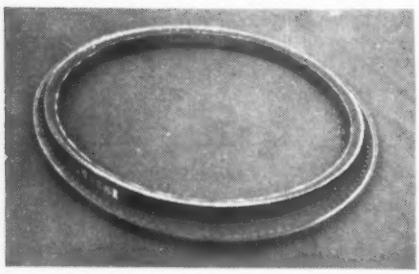
Some industrial uses that are being surveyed here also carry into clothing and home-furnishing textiles. A little overlapping, of course, cannot be avoided in such a survey.

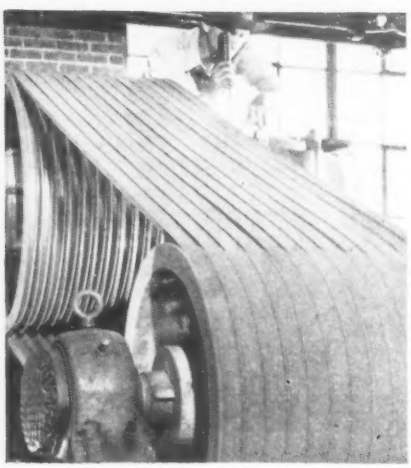
Tire-cord fabric accounts for the greatest single industrial use of synthetic fibers. Photo shows latex dipping, similar to slashing.



Rayon staple has been found to be ideal carrier fiber when spinning asbestos.

RAYON Uses Lead Synthetics In Industrial Field





Size of V-belts can be reduced when rayon is used as cord. Similar-size rayon-cord V-belts outwear cotton cord two to four times.

HIGHLIGHTS: Reinforcement in rubber goods is largest use and has best present potential—Bonded webs are growing application—Rayon helps asbestos spinning—Few acetate uses.

RAYON'S coup in tire cord has stimulated replacement of cotton by rayon in a host of other rubber goods: hose, V-belts, transmission belts, conveyor belts, diaphragms.

In hose up to 8 in., it is expected that by the end of 1949 rayon will be used almost exclusively. Formerly, between 10,000,000 to 12,000,000 lb. of textiles were used in this field. The exact poundage fluctuates, and the poundage of rayon used will be less. On the average, 45 lb. of rayon can replace 100 lb. of cotton in this use.

In V-belts, rayon cord permits either a reduction in size or two to four times the life, compared with cotton cord. Ford and Kaiser-Frazer are two auto builders who have put small V-belts in their new cars. When using rayon cord (2200 den. in 2/3, 3/3, 5/3, 5 ply, and 9 ply), less elongation occurs; and the cord can be expected to outlast the V-belt jacket. Rayon fabric is now being tried out as a jacket. Potential poundage is in the millions.

Rayon duck was once seen as a good possibility. Today, pound for pound, rayon duck costs more than cotton (on a dry-strength basis it is cheaper). The most serious drawback is that duck mills are generally not equipped to weave rayon duck, especially in winding the filling. Some rayon duck is being woven, including that for use in hose.

Conveyor and transmission belts incorporating rayon fabric show outstanding test results. A 32-oz. duck in rayon will show 650 to 700 lb. strength when made up (compared to 320 lb. for similar cotton), and some tests have gone as high as 750 lb. Fabric tests, however, do not show proportionately such high tests. Reason is less "fabric assistance" in rayon than in cotton when a grab test is made. Yarn used is usually 2200 den., 2 to 3 ply in the warp and singles or 2-ply filling.

Industrial Uses
VISCOSE RAYON

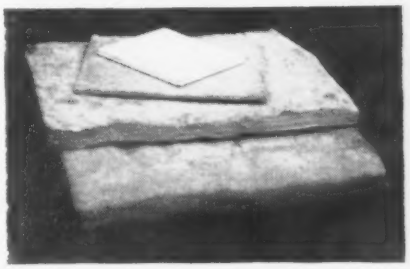
Commercial

Tire cord	Wire covering	Luggage cloth
Garden hose	Cords	Rug backing
Conveyor belts	Base for coated fabrics	Duck
Transmission belts	Lamp mantles	Braids
V-belts	Pump packing	Batting
Diaphragms	Flock	Rope
Bonded webs (see text)	Felts (with wool)	Venetian-blind tape
Tapes	Filters	Caulking
Blends with asbestos (see text)	Laminates	Wicks
Typewriter ribbons	Tracing cloth	Base for coating

Experimental

Surgical gauze	Sash cord	Cigarette and pipe filter
Absorbent "cotton"	Furniture stuffing (crimped)	Gaskets

Conveyor belts made with high-tenacity rayon cords are being used in at least 20 installations.



Bats of many different types are made from rayon and other synthetic fibers.

Bonded webs from garnetts can be both light and uniform, as this sample shows.

Fabric must be woven without size.

It was a distinct surprise to find that rayon could replace jute as a reinforcing yarn in paper. The fine sizes of jute needed are quite expensive to spin. In addition, rayon was found to produce a smoother paper.

Bonded webs made of both cotton and synthetics, or blends, have a definite place in the textile field. One former significant use, in tea bags, is now considered to be in the paper field (using rayon fiber)—the line between paper and some of the bonded webs is quite close.

Five types of equipment are currently being used to form webs for bonding: garnetts, cotton cards, woolen cards, ribbon lappers, and blowing equipment. Four general types of bonding are used: a printed adhesive, a liquid adhesive (dip or doctor-blade application), a chemical bond, or a fiber bond. Chemical bonds used include viscose solution, alkalis, sulphuric acid. Fiber bonds usually are accomplished by means of including plasticized-acetate fiber or Vinyon.

For spinning asbestos, addition of 2% to 22% of viscose staple (or cotton, or cotton and viscose staple) have made lower grades spinnable or improved the spinning of longer types. Asbestos fiber of commercial and underwriter's grades require the largest percentage of carrier fibers.

Rayon staple of 1.25 den., 2½ in. long of medium tenacity or of a crimped type have proved best, although fibers of 1 to 3 in. have been used.

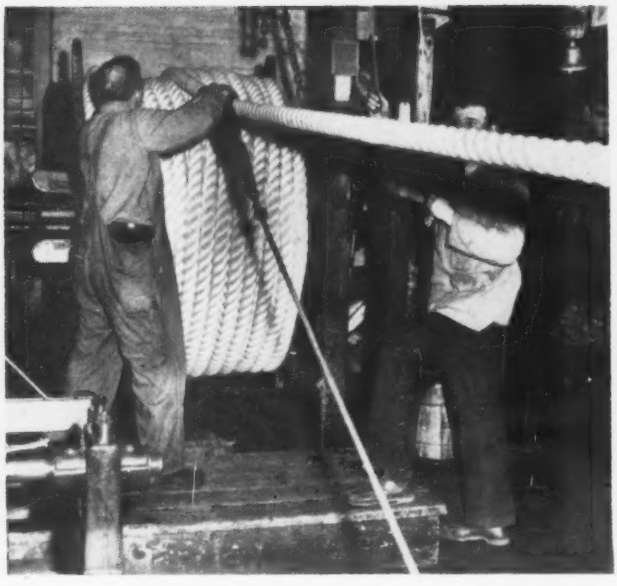
Blending is important. A thorough floor blend before picking is recommended. Usually picking is too severe; better yarn and less fly and waste can be expected when picking is at a minimum. Woolen cards with either fillet or metallic wire are generally used; some cards are single, others are in sets of two. Both tape and ring condensers are being used successfully. Ring spinning is replacing the mule for asbestos yarn, especially when new cards are used. Size of yarn most frequently spun is 10 cut (1,000 yd. per lb.), although some 35 cut and even finer has been produced.

Direct spinning is expected to open up new industrial uses of rayon, especially since such yarn is fuzzy yet has a higher strength than staple spun. Work in this field is just barely beginning.

Rayon tire-cord production is divided between 1100, 1650, and 2200 den. There is no agreement as to which size is best, and there is a possibility that a fourth size may be introduced. With the widening use of rayon cord in many other rubber products, it is unlikely that the range of yarns in this field will narrow down.

Acetate and cuprammonium rayons have very limited industrial uses. The use of plasticized-acetate fiber has already been mentioned. Another use is in decorative wire wrapping. Acetate is also used with Fiberglas to make pre-formed surgical casts.

Flock cut from rayon tow is often preferred because of its uniformity in length and cross section as well as its variety of lusters. Deniers mostly used are 1.5, 3, 5.5, and 10. Lengths are usually $\frac{1}{32}$, $\frac{1}{16}$, and $\frac{1}{8}$ in. The shorter lengths use the finer deniers. Blowing, spraying, and electrostatic precipitation are all employed in applying the flock. Fabrics frequently constitute the base.



First nylon hawser in commercial use was manufactured by Plymouth Cordage Co. (Military used much nylon cordage.)

Nylon fabric woven by Duplan was used to control lighting in Warner Brothers picture "Key Largo."

NYLON Industrial Uses Accelerated by Military

HIGHLIGHTS: Rubber products important—Bags and other laundry uses growing — Strength, chemical resistance, and high melting point are desirable combination.

NYLON, DURING THE WAR, was forced to go into many uses not necessarily planned by its manufacturer. There is no question that the military hastened the adoption of nylon for industrial uses.

Today Du Pont is actively promoting industrial uses of both continuous-filament and staple nylon. It recently published a booklet on nylon in industry and has for some months been advertising industrial uses.

Industrial Uses
NYLON

Commercial

Tire cord	Commercial upholstery	Cordage
V-Belts	Threads	Spindle tapes and bands
Conveyor belting	Bolting cloth	Fish nets
Rubber hose	Paper-maker's felt (blend)	Sail cloth
Transmission belts	Laundry nets	Laminates
Diaphragms	Cover cloths for pressing machines	Nets for handling food, etc.
Filter cloths	"Flannel" for pressing machines	Electrical insulation
Tentage	Flags and bunting	Webbings and tapes
Conveyor boots	Screens (monofilament)	Light-diffusion screens
Screen-printing screen		Tarpaulins
Base for coating		Fumigation tents
		Packings

Experimental

Pressing pads (staple)	Industrial bags	Work gloves

Nylon laundry nets have been found to give spectacular service (4 to 1) and spearhead the use of this fiber in laundries. Other uses include several pressing cloths (see list).

Airplane-wing deicer boots, pulsating type, are coated nylon; and for heat-deicing of airplane propellers nylon is interwoven with wires and coated.

In paper-maker's felt, nylon fibers are credited not only with improving strength but also with speeding up the removal of water from the paper stock.

Nylon filter cloths are used for a wide variety of purposes, including those in sewage plants, in which nylon was found to last months instead of just a few days.

The Duplan Corp. is actively promoting nylon fabrics for industrial uses. Included here is a tabulation of its nylon fabrics with properties of each.

Airplane tires have long used nylon cord, but now, in addition, nylon is being used by one producer in passenger-car tires. It appears in the top line at no increase in price over rayon. Base yarn for the tire is 210 den. It is conceivable that heavier deniers will later be spun for this use, although

Nylon tire cord is today used in a top line of passenger-car tires at no increase in price over rayon-cord tires.

Laundry nets are but one of a number of places nylon is used in laundries.

du Pont has not so stated. Nylon-cord tires are made extra strong to offset the possibility of "growing." Explanation is the low initial yield point of nylon that is evident in stress-strain curves.

Food processors utilize nylon in juice and oil extraction. Its combination of chemical resistance, relatively high melting point, and high wet strength make it suitable in many processes in which other fibers are less suited.

Fumigation tents for trees make use of nylon's light weight and chemical resistance. Its elasticity as well as its high strength are responsible for many cordage uses. For some, however, elasticity was too great and was reduced.

Anti-squeak shims for automobile springs, balloons for ship salvage, venetian-blind tapes, and windsocks are a few more uses made, for the most part, of regular nylon cloth, not greatly different from that suitable for clothing and furnishing uses.

Nylon monofilaments are also being used industrially in such things as screening and bolting cloth.

NYLON FABRICS

Quality Number	*Width (in.)*	*Weave*	*Weight oz. sq. yd.*	*Thickness (in.)*	*Air Permeability cu. ft. min.*	*Tensile Strength*		*% Elongation Breaking Point*		*Pounds Tear Strength*		*Remarks*
						Warp	*Filling*	*Warp*	*Filling*	*Warp*	*Filling*	
7775	36	Plain	0.83	0.0034	615	37.3	41.7	26.6	30	3.4	3.2	scoured & set
7866	38¼	2/1 twill	1.48	0.0034	21.0	59.1	64.7	16.6	18.6	2.3	2.6	scoured & set & dyed
7847	39¼	Plain (with ripstop)	1.94	0.0051	9.8	113	91.4	28	33.3	3.4	3.4	scoured & set
7901	45	Plain	2.8	0.0060	24.0	87	121	30	28	5	7	scoured & set
9960	37	Leno	2.98	0.0148	....	141	107	36	22	....	....	scoured & set
9S43	40	Plain	3.47	0.0081	34	166	93	46	32	6	3.9	scoured & set
7821	36¼	Plain	3.78	0.0085	16.8	239.4	164.2	33.3	30	12.3	14.7	scoured & set
7904	45	Plain	3.86	0.0069	5.09	243	165	34	28	12	13	scoured, set & calendered
7906	42	Plain	3.89	0.0088	20.0	232	169	31	27	17	18	scoured & set
7967	45	Plain (with ripstop)	4.11	0.0095 ground 0.0134 ripstop	54	295	182	....	....	18	17	dyed maroon
7963	42	Plain	4.29	0.0106	34	203	149	44	35	17	18	scoured & set
7867	45¼	Satin	4.66	0.0113	6.39	235	178.8	33.3	33.3	12.1	11.5	dyed cream & set
7878	35¾	Plain	4.71	0.0103	5.89	243.4	238.2	33.3	33.3	12	14.5	scoured & set & dyed
7961	45	2/2 twill	5.13	0.0118	18	282	242	33	37	15.9	19.1	calendered dyed brown
7915*	39¾	Plain	6.19	0.0152	22.3	318.7	113.6	54	14.6	14.6	9.9	scoured & framed
7822	36	Plain	6.85	0.0153	5.13	400.8	341.8	37	32	21.7	19.6	scoured & set
9S47	45	Plain	7.8	0.0175	27	351	302	38	35	27	28	dyed maroon
9S46-B	45	Plain (with ripstop)	7.9	0.0179 ground 0.0200 ripstop	46	379	321	28	36	41	38	dyed maroon
9S54-D	45	Plain (with ripstop)	8.36	0.0177 ground 0.0214 ripstop	27	506	419	32	31	57	57	dyed maroon
7823	36.7	Plain	9.11	0.0197	0.85	400	382	49.3	33.3	30.1	27.9	scoured & set & dyed
9S78	36	Plain	10.84	.....	0.88	537	490	50	29	....	....	dyed eggshell
9S48	45	Basket	11.9	0.0261	35	872	751	....	....	87	89	dyed maroon

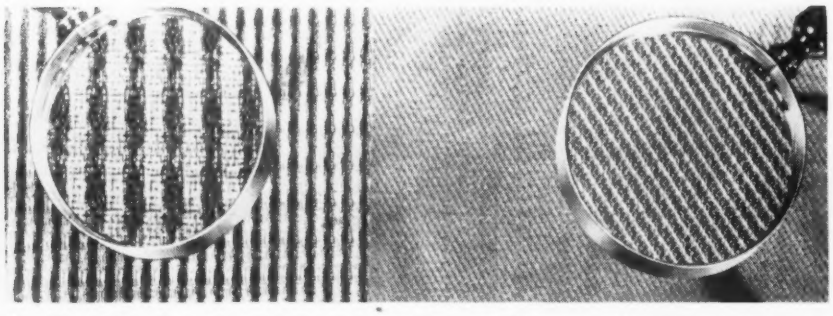
*Nylon and cotton.

Duplan nylon fabrics listed above are produced specifically for industrial uses.

Shade cloth for growing tobacco is becoming large use of vinylidene-chloride monofilament fabric. Fabric shown is 10x8 made from 15-mil yarn. It is not calendered.

Drying trays of various sorts are made from monofilament screening. Trays illustrated are used in the manufacturing of a soap powder.

Many Screening Uses Found For MONOFILAMENT Fabrics



Samples of Lumite fabrics woven by Lumite Div. of Chicopee Mfg. Corp. Striped pattern is used on radio grilles.

HIGHLIGHTS: Some being developed fine enough for bolting cloth—Textile mills utilize fabrics in Pneumafil system, to control lint fly, to shrinkproof wool—Several horticultural applications found.

SCREENS AND UPHOLSTERY cloth are the two big-volume products from saran, Velon, and other synthetic monofilament yarns. In industry, screens are being used in a wide variety of applications. One which is of double interest to textile men is as a conveyor for wool that is being treated to make it shrink-resistant.

Shade cloth and tarpaulins, such as made by the Lumite Div. of Chicopee Mfg. Co., are actually screens. The tarpaulins might be considered as coated screens. The building trades seem to appreciate such tarpaulins because they not only keep out wind and rain but also let in light.

Tests recently conducted indicate that radio grilles of Lumite (saran) monofilaments actually result in more volume than is produced by an uncovered speaker. The phenomena is being investigated—and more grilles are being used.

Another application of double interest to textile men is monofilament screening used in Pneumafil installations. In the system, a 32x32 fabric

Industrial Uses
VINYLIDENE-CHLORIDE (Saran) MONOFILAMENTS

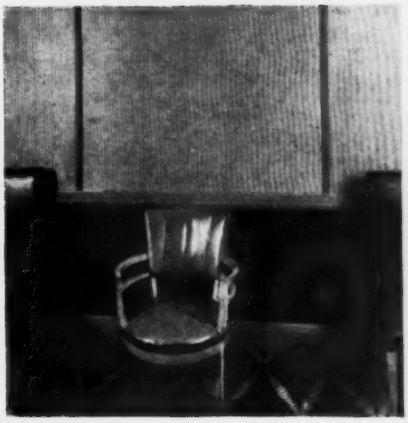
Commercial

- Screening
- Chemical filters
- Acid-bottle-cap liners (coated)
- Mold cloth (vacuum concrete)
- Shade cloth (for tobacco, etc.)
- Luggage cloth
- Drying trays
- Conveyor belt
- Head liners (aircraft)
- Fan screen
- Wall covering
- Theater seats
- Headrest cloth
- Plasma filter
- Anode bag
- Fish bag
- Car-radiator screen
- Innersole
- Food-drying screens
- Dye bags
- Braids
- Greenhouse covers
- Gasket reinforcing
- Poultry-dropping cloth
- Container for chemical purifiers
- Battery separators
- Storage trays
- Packers' stockinet
- Transportation fabrics
- Fishing creels
- Minnow traps and nets
- Rubber-curing cloth
- Lobster-bait holder
- Dehydration bags
- Fish-breeding traps
- Electroplating tank nets
- Webbing
- Electroplating separators
- Tarpaulin (coated)
- Seed-bed covers
- Window glazing (laminate)
- Air filters
- Base for felt
- Plastic reinforcing

Experimental

- Liquid filter
- Screen-printing screen
- Bolting cloth
- Concrete-pipe reinforcing (scrap)
- Well-point strainer
- Film-processing carrier
- Paper-makers' felt base
- Awning

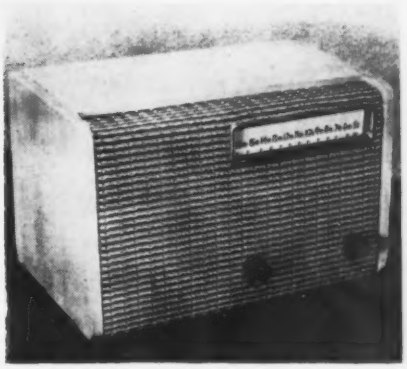
Dehydration flakes are here poured into open-mesh bag made of monofilament fabric.



Wall is covered with monofilament cloth. Striped design is more pronounced than is evident in photo.

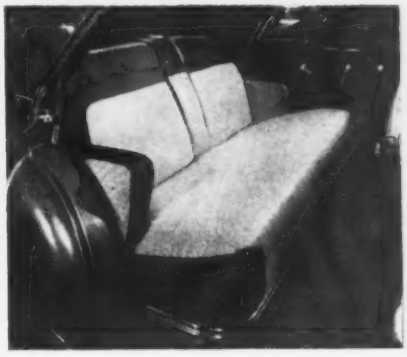
Building tarpaulin of vinylidene-chloride monofilament is coated. It protects area but admits light.

Screen is used to guard air circulator built by Welch Co. Fabric is Lumite.



Lumite radio grilles are reported to increase signal from radios.

Upholstery of saran woven by Chicopee is standard equipment on Packard station sedan.



Seat covering is large use of vinylidene-chloride fabrics. Shown here is Lumite in a Cadillac.

Nylon and Polyethylene

In addition to vinylidene-chloride monofilaments, such as saran, there are nylon and polyethylene monofilaments being used in industrial fabrics. Most uses, however, are experimental but follow, to a degree, those listed for vinylidene chloride.

It should be pointed out that the two synthetics in monofilament form bracket vinylidene chloride—nylon is much stiffer, and polyethylene has a slightly better drape; nylon has a higher softening point, polyethylene a lower.

The light weight of polyethylene has been thought of as advantageous for use in marine ropes. Such ropes would float and would be quite strong.

of 10-mil yarn is used to remove fibers from the air stream of the system. Some mills are also using monofilament cloth to inclose departments or areas to keep fly from one section from contaminating another. The cloth is actually also a screening, which passes air but not lint.

Experimentally, a fine 10XX bolting cloth has been made from 3-mil monofilaments woven 110x110. Similar fabrics are also being tried out as screen-printing screens.

As a wall covering in public buildings, saran fabrics are pointed out to be resistant to staining by lipstick.

Chicopee has developed an acid-bottle-cap liner by using its Lumite as a base for heavy wax coatings. Another fabric use is in paper-makers felts as a center core for the felt.

Some filter uses call for quite fine fabrics, such as the 60x60 5-mil type for blood plasma.

Electroplaters are using saran screening both as a carrier for the material being plated and as separators.

Shade cloth for growing tobacco and for greenhouse or other horticultural use may stimulate large-volume production. Such fabrics also might be though of as a fine screening. Coarser types are suitable for keeping insects or birds away from crops, such as strawberries.

One use of monofilament cloth is in molded plastics—all-plastic caskets, for instance. Fabric used is 10x10 of 15-mil filament.

Finally, an industrial use has been found for monofilament scrap. It is being employed as a reinforcement in concrete water pipe. Demand for scrap for this one use threatens to exceed supply.

Vinyon N is used industrially in such things as cordage, auto-window channels (black strips), filter fabrics, and dust-fume bags.

Packing material and pads are Vinyon uses that shortcut normal textile processing.

Wide Fields Seen For Various VINYONS

HIGHLIGHTS: Search for new uses intensified despite limited production to date — New type has higher heat resistance — Shrinkage properties permit tight filter fabrics and also firm tapes—Knit fabrics can be stiffened and formed.

Industrial Uses

VINYON N

Commercial (limited)

Filter fabrics	Dust-collection cloths	Resist yarns (for identification)
Auto-window channels	Transportation fabrics	Screen-printing screen
Base for coating	Dye nets	Tapes
Sail cloth	Threads	Knit filter nets
Formed fabrics (stiffened)	Sail covers	
Dust-fume bags	Duck	

Experimental

Air filters (bats)	Oxygen tents	Bolting cloth
Thermal insulation	Aircraft fabrics	Anode bags
Tents	Laundry nets	Mining-chute cloth
Caulking	Fly-casting lines	Cordage
Battery separators (bats)	Paper-makers felt	Laminates
Electrical insulation		

VINYON

Commercial (limited)

Filters	Cordage	Surgical casts (with glass fibers)
Pump packing	Fish nets	Tapes
Laminates	Separator cord	
Bats	Base for lace	

Experimental

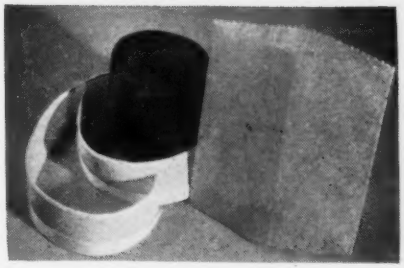
Razor strops	Block-printers felt	Battery separators
Filler	Gaskets	Duck

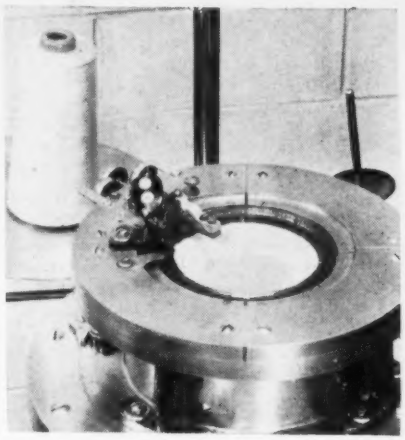
SINCE VINYON and Vinyon N are produced in very limited quantities, industrial uses listed are given as limited commercial or as experimental. Many uses fall into the latter class. Major emphasis to date has been to find out how many uses, industrial included, could be found for these chemical yarns.

Vinyon has a definite place as a bonding fiber in pressed felts and in bonded webs. Its chemical resistance has also assured it a place in many filter fabrics. Its thermal softening point, however, has restricted its use in some applications.

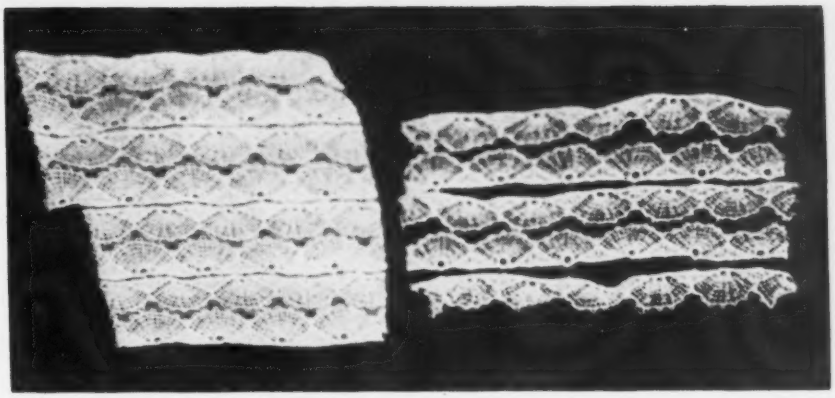
In bonded webs, the binding Vinyon fibers can be placed on the outside or inside as desired to obtain special effects.

Vinyon N of various types has relatively high softening points and is also quite chemical resistant. The

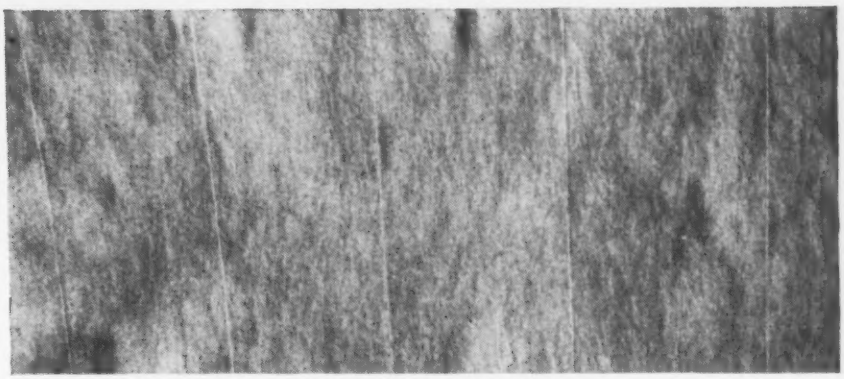




Knit fabrics of Vinyon N can be stiffened and formed into a variety of shapes.



Carrier fabric for schiffli lace is use for Vinyon.



Vinyon is here blended with wool to form a double web that is reinforced with cords.

TWO VINYONS

Many industrial uses for Vinyon and Vinyon N overlap. Both have good chemical resistance, but some types of Vinyon N are more heat resistant than Vinyon. Vinyon is composed of vinyl chloride and vinyl acetate whereas Vinyon N is made from vinyl chloride and acrylonitrile.

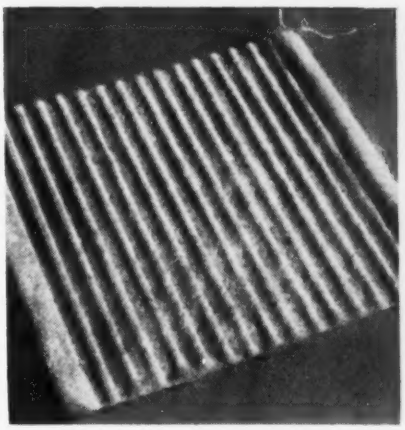
combination of these properties has resulted in its use in dust-fume bags and in filters in many applications. Its toughness (it ranks between rayon and nylon) and its smoothness have led to its use by automobile builders as window-channel fabric.

Some types of Vinyon N, unlike other fibers, can be stiffened and formed. Usually a knit fabric is employed for such moldings. The full possibilities of such uses are still to be explored. Knit fabrics are also being used as filters.

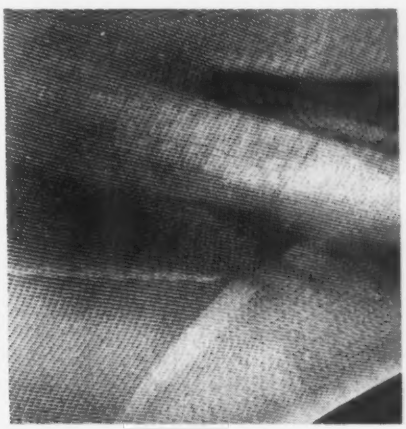
Controlled shrinkage of types of Vinyon N is being employed to produce stiff fabrics, such as tapes, or fabrics more tightly interlaced than the cloth which comes off the loom. Filter cloth with extremely fine openings can be thus produced.

The strength, resistance to rot, and ability to shrink indicate that Vinyon N might be quite suitable as an aircraft covering.

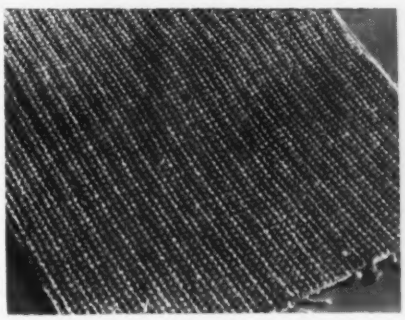
No Vinyon N staple has been manufactured, as such, to date; but its production looks promising as a logical development.



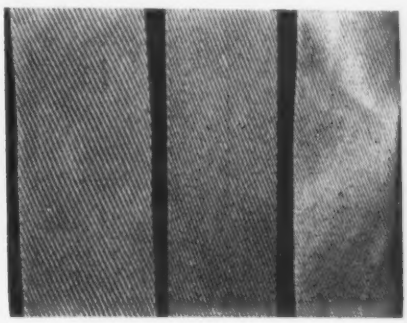
Bats of Vinyon N can be compressed as needed.



Nets of Vinyon N have a variety of industrial uses. Fabric is leno.

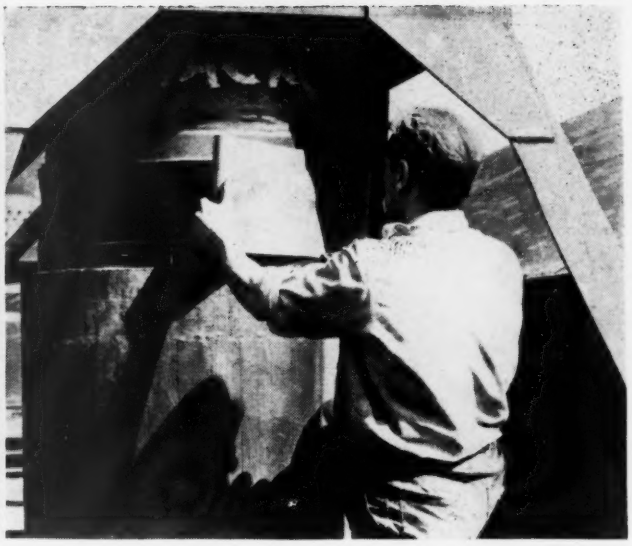


Transportation fabric is one use seen for this product woven from Vinyon N.



Vinyon tape (left) woven 2⅛ in. wide was calendered to 1¾ in. and heat-shrunk to 1⅝ in. Narrowing stiffened the tape.

Awnings of Fiberglas are vinyl coated. Installation shown is in New Orleans.



Rubber-coated Fiberglas fabric for flexible duct is being bonded to double-coated adhesive tape that uses glass-fiber cloth base

Electrical Field Leads In Use of GLASS FIBER

GLASS-FIBER CLOTHS

Quality	Owens-Corning Cloth Co.	Raw[1] Width (In.)	Thickness[2] (In.)	Weight Oz./Sq. Yd.	Approx. Breaking Str.[3] Warp Lb.	Approx. Breaking Str.[3] Filling Lb.	Weave	Construction[4]	Yarn Warp	Yarn Filling
6080	X 2623	36½	0.0034	1.36	45	39	plain	24 x 24	225-1/0	225-1/0
6039	108	38½	0.002	1.43	70	40	plain	60 x 47	900-1/2	900-1/2
6027	112	38½	0.003	2.09	100	70	plain	40 x 39	450-1/2	450-1/2
6027	112	50	0.003	2.09	100	70	plain	40 x 39	450-1/2	450-1/2
6032	113	38½	0.003	2.46	100	70	plain	60 x 64	450-1/2	900-1/2
6071	119	38½	0.004	2.80	75	60	plain	54 x 50	450-1/2	450-1/2
6025	116	38½	0.004	3.16	150	100	plain	60 x 58	450-1/2	450-1/2
6079	118	38½	0.005	4.06	190	140	4 sh. satin	90 x 60	450-1/2	450-1/2
6076	120	38½	0.004	3.6	125	120	4 sh. satin	60 x 58	450-1/2	450-1/2
6095	X 2640	32	0.005	3.7	169	172	plain	36 x 34	450-2/2	450-2/2
6088	126	38½	0.0065	5.40	225	195	plain	34 x 32	450-3/2	450-3/2
6044	127	38½	0.007	6.00	250	200	plain	42 x 32	450-3/2	450-3/2
6042	128	38½	0.007	6.00	250	200	plain	42 x 32	225-1/3	225-1/3
6057	138	38½[5]	0.007	6.70	300	200	4 sh. satin	64 x 60	450-2/2	450-2/2
6040	162	38[6]	0.015	12.20	450	350	plain	28 x 16	225-2/5	225-2/5
6092	181	38½	0.0085	8.9	340	330	8 sh. satin	57 x 54	225-1/3	225-1/3
6094	182	38½	0.0130	12.4	440	400	8 sh. satin	60 x 56	225-2/2	225-2/2

[1] *Raw width* is listed incl. width for selvage which amounts to about ¼ in. on either side of the cloth unless otherwise noted.

[2] *Thickness* is determined by ASTM designation D579-43, Method C.

[3] *Approx. breaking strength* figures are given in lb. per inch width (strip method) and should serve as a guide only, not as a specification. These values are subject to considerable variation, dependent on method of measurement, etc.

[4] *Construction* is given in ends per inch in warp and picks per inch in filling.

[5] 1/16-in. selvage on either side.

[6] No selvage.

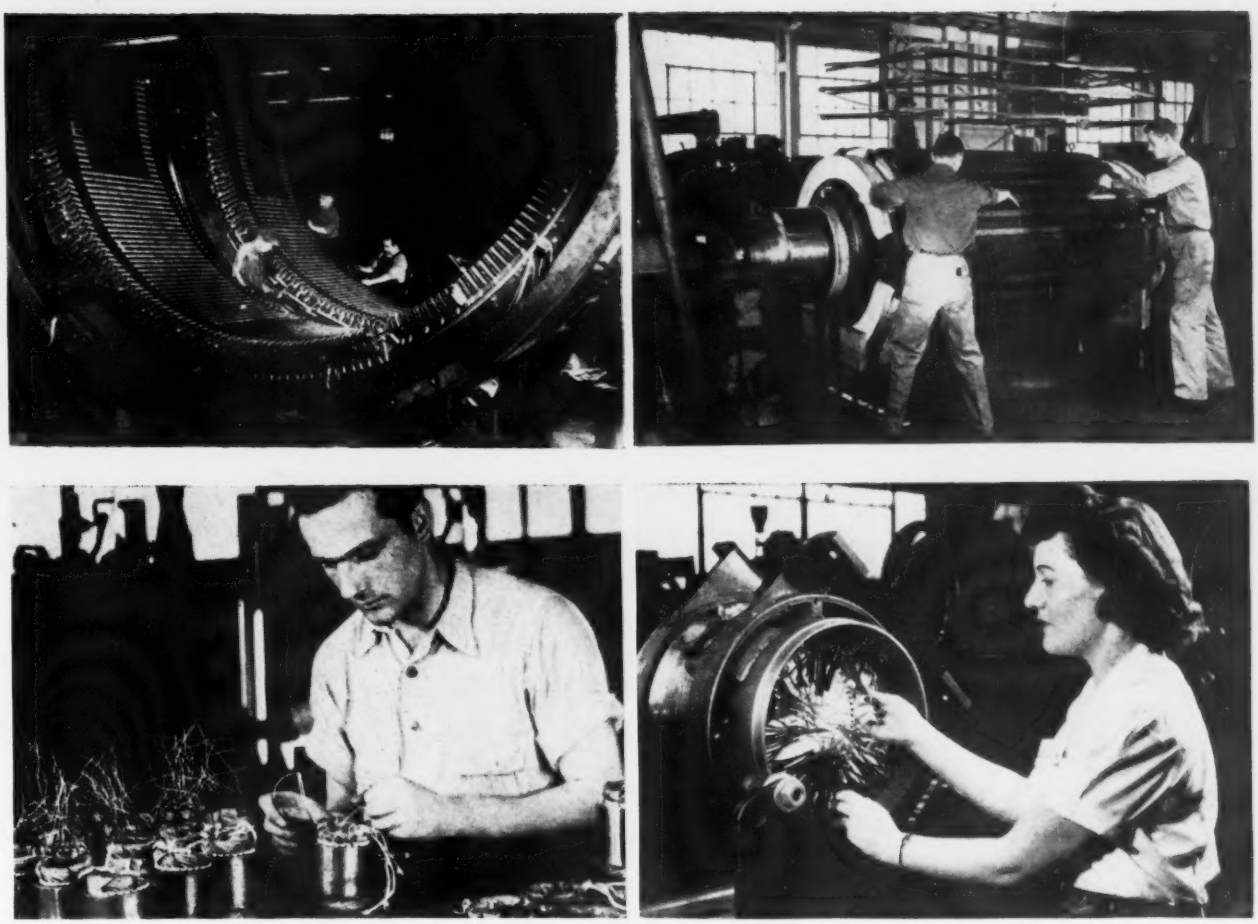
Constructions above were originally made by Owens-Corning but are now produced by Duplan Corp.

HIGHLIGHTS: **Glass fibers employed mainly in industry—Coatings are important—Fiber producer discontinued cloth manufacture—Numbering system and some processing practices are unique.**

INDUSTRIAL USES account for the lion's share of glass-fiber production. The fiber is not considered suitable for garment use, but is being promoted for furnishings. To date, however, it can be considered, more than any other synthetic, principally an industrial fiber.

For years, Owens-Corning Fiberglas Corp. produced the fiber, twisted the yarn, and wove the cloth which it sold generally for specific use. Today, it sells yarns only and has left cloth manufacture to textile mills. Some producers are the Duplan Corp.; Hess, Goldsmith & Co., Inc.; Soule Mills; United Merchants Industrial Fabrics Corp.; U. S. Rubber Co.

Many fabrics Owens-Corning produced are still known by its style numbers. Some of these numbers can be seen in the accompanying tabulation of glass-fiber fabrics produced by the



Electrical insulation is foremost use of glass-fiber textiles. Above, left, Fiberglas insulated coils are placed in 20,000 kva. generator; at right, rotor for different generator uses Fiberglas tape on end turns of coils. Bottom, left, spinneret-bucket motors use glass-fiber cord to lash the coils; right, motor stator is being insulated with Fiberglas tubing.

Duplan Corp. The listing shows only broad goods. Much glass fiber by Owens-Corning and the new producer Glass Fibers, Inc., is used in bats and mats, in yarn and cordages, and in narrow fabrics and braids.

Both producers of glass fibers use a numbering system different from any for other yarns. The basis is hundreds of yards per pound. For example, any "450" yarn has 45,000 yd. per lb. in the original strands. Much glass yarn is plied or cabled. Examples are 450-1/2, which is actually 2 ply of yarn that originally was 45,000 yd. per lb. The resulting yarn, due to twist contraction, will be something less than 22,500 yd. per lb. A 450-2/2 yarn is composed of two 2-ply ends.

Direction and quantity of twist in glass yarns is extremely important. Twist cannot be set in the accepted sense but must be compensated by means of twisting the single ends and ply yarns in opposite directions to each other.

Another peculiarity of glass yarn is its inability to be knotted as is normally done. Either knots are dispensed

Thin, smooth mat of glass fibers has been wound around a 26-in. diameter pipe to hold a coating material that is to be applied.

Gaskets made of rubber-coated Fiberglas are here used on edges of bus doors.

Industrial Uses

GLASS FIBERS

Electrical insulation	Conveyor belts	Industrial adhesive tapes*
Plastic reinforcement (fabric and mats)	Paper reinforcement (cords)	Flexible ducts*
Awnings*	Hose (reinforcing)	Fillings
Tarpaulins*	Motion-picture screens	Acoustical insulation (fiber form)
Fire blankets*	Filters (cloth and bat)	Thermal insulation (fiber form)
Diaphragms	Laboratory aprons*	Weatherstripping
Gaskets*	Transportation fabrics*	Storage-battery mats
Fender welting*	Ironing-board covers (lightly coated)	Pipe wraps (mats)
Waterproof membrane	Folding doors*	Lamp shades (mats)
Roofing mops		

*Coated

with or ends are bound together with an adhesive.

Electric insulation uses are an extremely wide field for glass yarns in the form of tapes, braids, cords, cloths, and sleevings. In most applications, coatings of some sort are applied. The term coatings here is used in a very broad sense, actually some coverings are varnishes and some are laminations.

Fabrics are used to filter hot, concentrated acid solutions (except hydrofluoric). Roofing applicators use glass yarn for mops. An open-mesh woven fabric serves as a rot-proof membrane for use on roofs or on brick and concrete walls to hold waterproofing compounds. Yarns are used to reinforce heavy, waterproof wrapping paper.

Vinyl-coated glass fabrics are used as fireproof and rot-proof awnings. Webs are used in manufacture of outdoor furniture because the glass fibers will not rot.

Most fabrics of glass are made from continuous-filament yarns. Relatively little glass staple is spun into yarns. There are many uses for glass fibers in bats, mats, blankets, and webs, which are not processed in conventional textile machinery. Non-textile uses account for a large poundage.

PROTEIN Fiber Enters Industrial Field Also

HIGHLIGHTS: Surgical dressing may become important—Thermosetting and water-repellent types developed—Tow available.

POSSIBILITIES IN THE industrial field are not being overlooked by the newcomer to the synthetic-fiber field, Virginia-Carolina Chemical Co. which is currently producing 7,000 lb. a day of Vicara in the former Aralac plant at Taftville, Conn. The company, incidentally, is the first to offer a protein-fiber tow. It has one of 1,000,000 total denier containing 250,000 filaments of 4 den. each. It foresees production of regular filament yarn.

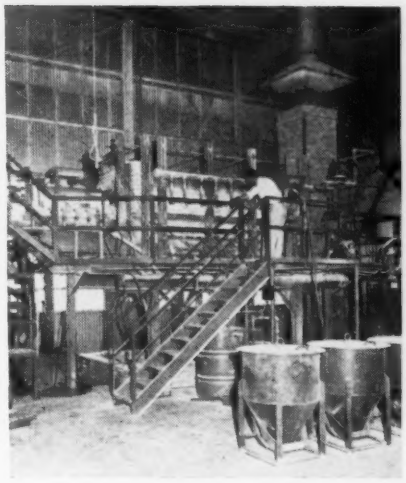
Industrial Uses

PROTEIN FIBER

Felts	Thermal insulation	Filters
Electrical insulation	Dessicant cloth bags	Permanent-waving wrappings
Surgical dressing	Flock	

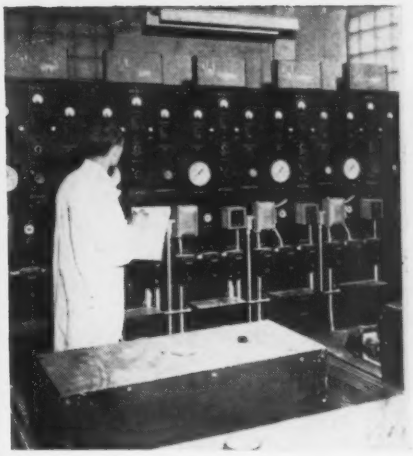
Surgical dressing may become an important use of protein fiber because, unlike other fibers, the human body can easily dissolve any part of a dressing which might adhere to or be trapped within the body.

In addition to a more-or-less conventional protein fiber, Virginia-Carolina reports development of a water-repellent type and of a thermosetting fiber. The type which somewhat repels water may ultimately become the principal fiber the company will produce. It should have numerous industrial uses in addition to clothing applications. Repellency drops off above 130° F. at present. In felts, protein fibers would, of course, be combined with wool or possibly Vinyon.



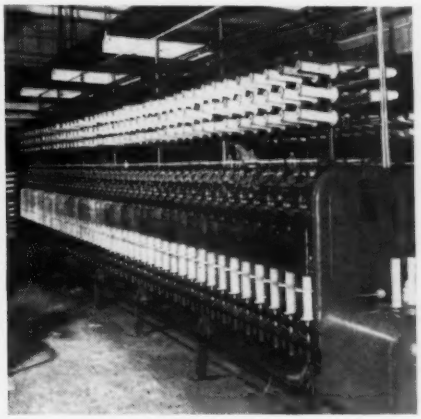
Alkaline-free borosilicate glass is melted by gas and high-frequency heat in this furnace.

Molten glass is formed into marbles as it cools on revolving spiral rolls. Marble form speeds inspection.



Inspected glass marbles are placed in hopper on top floor and melted by 2,400°F. high-frequency heat. Yarn is extruded through 204-hole spinneret in bottom of hoppers.

Glass strands extruded at 10,000 ft. per min. cool and harden as they pass to the bottom floor for sizing and reeling. Starch-type size binds and lubricates strands.



Yarn is plied on standard downtwisters in many combinations from 2 single strands to 5 strands of 4-ply yarn. At present, 28 numbers are available.

Packages weighing about 2½ lb. are inspected and wrapped, then packaged in boxes of 16 that prevent contact between cones.

New GLASS-YARN Company in Production

A NEW GLASS-YARN producer, Glass Fibers, Inc., Waterville, Ohio, is now manufacturing several counts and plies of glass multi-filament yarns.

Present annual capacity of the new concrete-block and steel plant is about 900,000 lb. The building will contain 53,000 sq. ft. after a new addition is completed. In it, glass is melted, extruded, plied into a wide range of combinations, packaged, and shipped.

A well-equipped testing laboratory in the plant maintains quality standards and tests yarns being made to specifications.

Yarns are presently available in the 150, 225, and 450 series. The range produced by Glass Fibers, is:

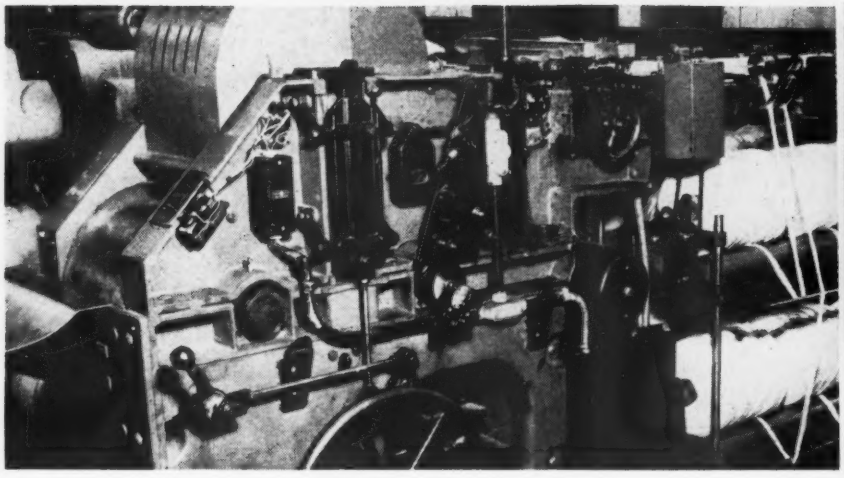
150	225	450
150-1/0	225-1/0	450-1/0
150-1/2	225-2/0	450-2/0
150-1/3	225-3/0	450-3/0
150-2/2	225-1/2	450-4/0
150-3/2	225-1/3	450-1/2
150-3/3	225-2/2	450-1/3
150-3/4	225-3/2	450-2/2
	225-3/3	450-3/2
	225-4/3	450-3/3
		450-3/5
		450-4/3
		450-4/5

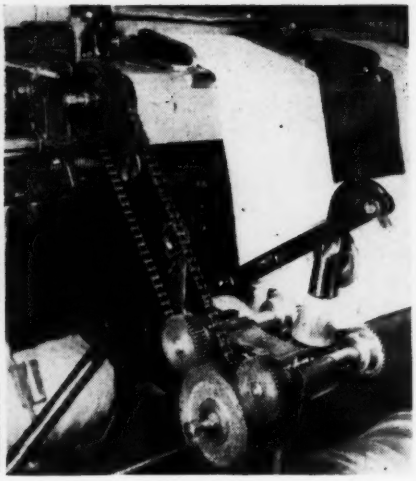
NUMBERING SYSTEM

IN THE SYSTEM used for numbering glass yarns, No. 1 yarn has 100 yd. per lb. To find the yd. per lb. of any number, add two zeros. For instance, No. 1 has 100 yd. per lb., No. 150 has 15,000 yd. per lb., No. 225 has 22,500 yd. per lb.

Plies are expressed as in cotton yarn. For instance, 1/0 is single yarn unplied, 1/2 is 2 plies of single yarn, 3/2 is 2 plies of 3-ply yarn, 4/5 is 5 plies of 4-ply yarn or 4-ply yarn cabled 5 times.

A yarn designated 150-3/4 would be 4 plies of 3-ply yarn of which each end has 15,000 yd. per lb. Total yards per pound would be 15,000 ÷ 3 ÷ 4 or 1,250 yd. per lb. plus takeup.

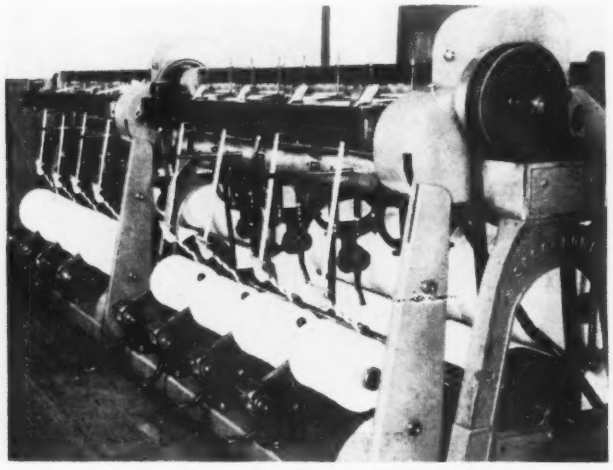




LAPWINDER AND DRAWING-FRAME CREELS . . . . ARE CHAIN-AND-SPROCKET DRIVEN

Six worsted tops are creeled into lapwinder before and after breaker drawing. Creel speed is synchronized with back drawing roll.

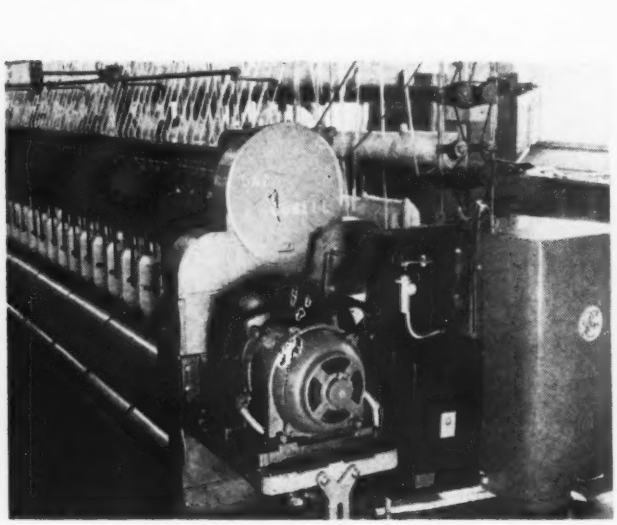
Precise control of tension between creel and drawing rolls is permitted by a large change gear.



MUCH-MODIFIED DRAWING FRAME . . . . USES NO ROVING CANS

Sliver is wound around balling-motion presser arm to control tension, make a firm package.

Drawing-frame trumpet for processing worsted is of new design—is not completely closed.



DRAWING, ROVING, AND SPINNING . . . . DRAFT SYSTEMS ARE MODIFIED

Roving frame has 3 top rolls, 4 bottom rolls. Driven creel holds drawn sliver in ball form.

Spinning frame has single-belt long-draft system with one drafting zone.

Worsted Spun on New COTTON-TYPE EQUIPMENT

HIGHLIGHTS: *First Saco-Lowell modified cotton machinery for spinning worsted used in Maine mill—Creels on lapwinder, drawing frame, and roving frame are positively driven—Drafting system of drawing and roving frame modified—Balling motion replaces roving cans—Trap motion prevents single twisting.*

By RICHARD S. CROWSLEY

WRIGHT SPINNING CO., Westbrook, Me., is spinning worsted yarn from top on the first equipment by Saco-Lowell Shops for this purpose. About 2,800 spindles and the necessary preparatory equipment are installed. The installation has been operating long enough to satisfy both the mill technicians and the machinery manufacturer that the system is successful not only in theory and machine design, but also in satisfactory operation in actual production.

The prospect of spinning worsted yarn on the cotton system is attractive to the cotton spinner. Several mills have converted standard cotton machinery over to the processing of wool. The main incentive is the large reduction in preparatory processes with the accompanying reduction in the manufacturing costs. Not all conversions have been entirely successful—some yarn spun on these improvized units has compared unfavorably with similar yarn spun on the Bradford and French systems. Yarn made by other units has been declared by worsted men to be as good as any worsted yarn they have ever examined.

The unit follows a conventional organization starting with combed-worsted top. The top is first made into a lap on the lapwinder, run through the breaker drawing, again made into a lap on the lapwinder, and then processed on the finisher drawing. Sliver from the finisher drawing is drafted on one process of roving and spun on the spinning frame. Before twisting, the yarn is rewound; it is also repackaged on a winder after being two-plied. As the Wright unit is small, the productive rate of both lapwinder and winder can be used twice in the process. The same lapwinder makes the top into a lap and makes the lap between the breaker and finisher drawing. The winder is used in the same manner, one side winds the yarn from the spinning frame and the other rewinds the plied yarn after twisting.

Most serious drawback to the system is the severe limitation in the top that can be used. Fibers in the top cannot be over an average staple length of 3¼ in. with a small proportion of fibers not exceeding 3⅝ in. Always present in top is a small percentage of long fibers which cause the greatest difficulties in fiber control and in spinning even yarn. Fibers must also be soft and have a fine cross section to draft properly. Most suitable top for processing on this system is 64s grade. This limitation is serious, for the supply of top of this grade is limited and commands a premium price. Most technicians believe that the limitation in the fiber length that can be processed will be removed and the range of top extended.

Tops which are sent to the mill from the top maker are first clearly marked and then conditioned for at least 24 hr. before being used. Marking the top is important because it cannot be creeled indiscriminately like cotton. Wool fibers differ in their affinity for a given dye, and a fabric woven of yarn from different lots of top will show shading defects.

Flow Chart and Organization for Spinning 40s Worsted From Top

Lapwinder
6 ends of top at 236 gr. per yd.
Draft: 1.61
Lap: 878 gr. yd.

Breaker Drawing
Lap: 878 gr. per yd.
Draft: 12.6
Sliver: 68 gr. per yd.

Lapwinder
12 ends of sliver 68 gr. per yd.
Draft: 1.11
Lap: 735 gr. yd.

Finisher Drawing
Lap: 735 gr. per yd.
Draft: 14.10
Sliver: 52 gr. per yd.

Roving
Sliver: 52 gr. per yd.
Draft: 20
Hank Roving: 3.20

Spinning
Hank Roving: 3.20 double
Draft: 16.65
Yarn: 27.00 (40s worsted)

Winder

Twister

Winder

LAP WINDER. Six tops are creeled into the lapwinder to make a lap to be fed to the breaker drawing. The creel of the lapwinder has a pair of rolls which support the top as it is fed to the calender section. Rolls are positively driven by a chain and sprocket, so that the speed of unrolling will be the same as the speed of the drafting rolls taking up the stock.

The chain and sprocket drives the creel rolls through a train of fine-pitch gears. A change gear can be used to regulate the speed and to control the tension of the stock between drafting rolls and creel. Tension must be closely watched, as an excessive amount will stretch the sliver and cause spinning of uneven yarn.

Two sets of drafting rolls are placed behind the large calender rolls. These drafting rolls are designed to draft only the very small amount necessary to straighten the fibers and break any interlocking so that fiber control of the breaker drawing will be improved. The draft at this point is only from 1.25 to 1.50. Bottom rolls are fluted metallic; top rolls are covered with a synthetic material.

Breaker and finisher drawing frames are identical in construction and appearance. Both frames have a creel suitable for a lap. Both wind the drawn sliver in the form of a ball. The creel is designed to unwind the lap at the same speed at which it is taken up by the back rolls. A change gear in the driving train permits precise adjustments. If sliver is not taken up fast enough by the back rolls, it will become slack; if the lap is unrolled too slowly, the sliver will become stretched or broken. The creel is driven by a sprocket and chain from the back roll, so that speed changes

(Continued on page 256)

GAS-FIRED DRYERS
Dry Quickly, Save Space

HIGHLIGHTS: *Heat loss caused by transfer of heat from one medium to another eliminated—Festoon dryers and tenter dryers can be more compact—Very little maintenance required—Temperatures run up to 450° F.*

By C. NORRIS RABOLD
Consulting Editor, TEXTILE WORLD

DIRECT APPLICATION of heat to fabrics is logically the most straightforward and efficient method of drying. Direct firing has a superiority over convection heating because there are no losses caused by transferring the heat from one medium to another. Long heating-up periods are done away with, and dryer can be put to use a few minutes from the time the burners are lighted. Elaborate equipment necessary for heat exchanging on the conventional-type dryers is reason to give serious thought to a simpler means of doing this work.

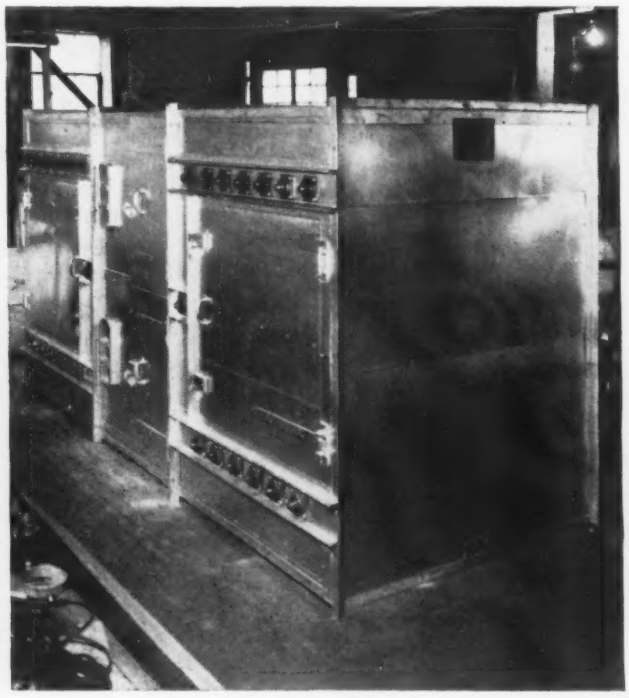
Heat supplied by an oil-gas generator, which makes a completely combustible gas, has been the answer to supplementary or complete drying in a number of the largest finishing plants in the South and East.

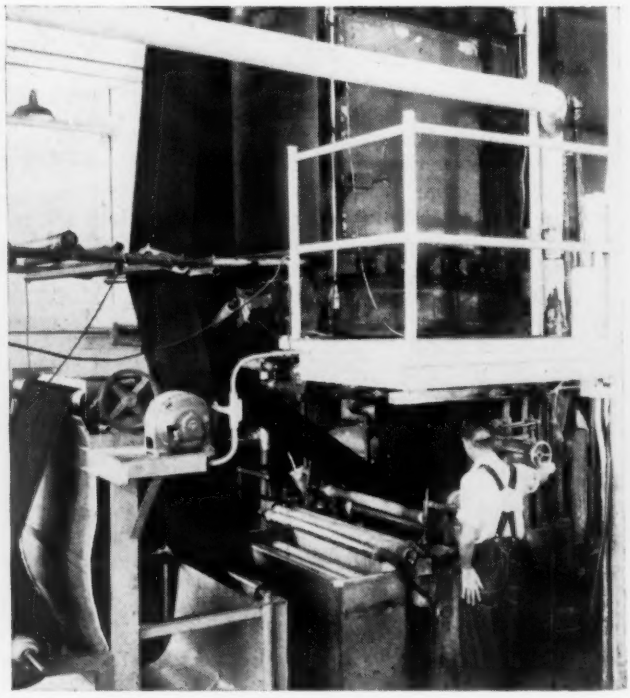
Gas-fired festoon driers are small, compact units which can be mounted either overhead or on the floor. Air returning from the cloth chamber is directed into the burners, mixed in the high-temperature fans, and returned to be again applied to the cloth by an ingenious arrangement of distribution baffles. These baffles increase and decrease the velocity of the drying gases in their passage through the narrow cloth slots, thus creating a "pumping" action against the cloth. The value of air motion on the uniformity of the product and the rate of drying cannot be overestimated. In a passage of less than 5 ft., and through four sets of baffles, temperature of the drying medium is reduced by 180° F. The drier is of small cubic capacity. Individual fan volume is 6,000 cfm. Drying air is reheated and circulated through the cloth chambers 24 times a minute. Temperature control can be very fast, as the burners operate on a high-low principle and are immediately responsive to the automatic temperature controls.

TEMPERATURE RANGE. Wide ranges of temperatures obtainable in the drier, up to 450° F., enable the operator to run at a desirable speed for any type of fabric.

The gas-fired tenter house is 42 ft. long and accomplishes the same results as those obtained from longer steam tenters. Each fan, or blower, has its own individual burners which may be controlled independently of the rest, giving close zone control of the heat throughout the length of the dryer. Drying air is applied to the cloth through directly opposed nozzles at 4,000 ft. per min., eliminating cloth

High-temperature heat applied directly to fabric . . .

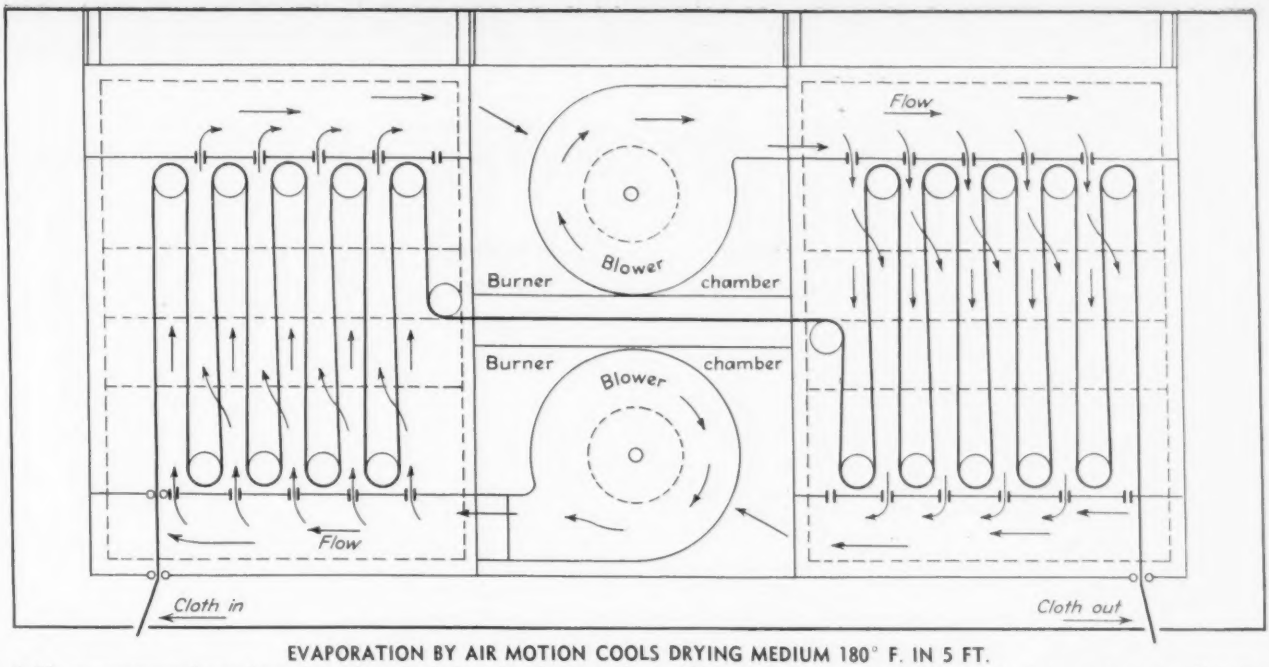




COMPACT DRYER MAY BE MOUNTED . . . ON FLOOR OR OVERHEAD

This festoon dryer is about 14 ft. long, 7 ft. high. Doors provide ready access to drying section. Temperatures up to 450° F. are obtainable, if desired.

Festoon dryer is mounted over finishing mangle and before hot-air tenter frame. Insulated pipe near top carries hot gasified oil to burners in dryer.



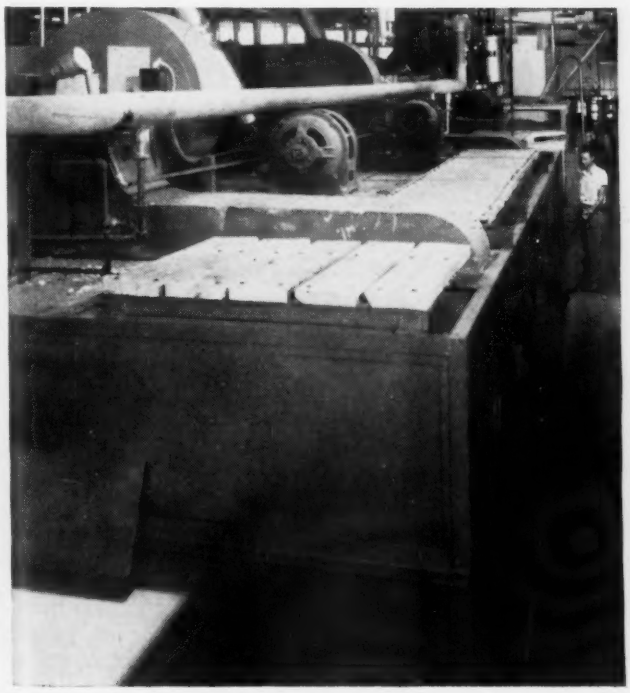
EVAPORATION BY AIR MOTION COOLS DRYING MEDIUM 180° F. IN 5 FT.

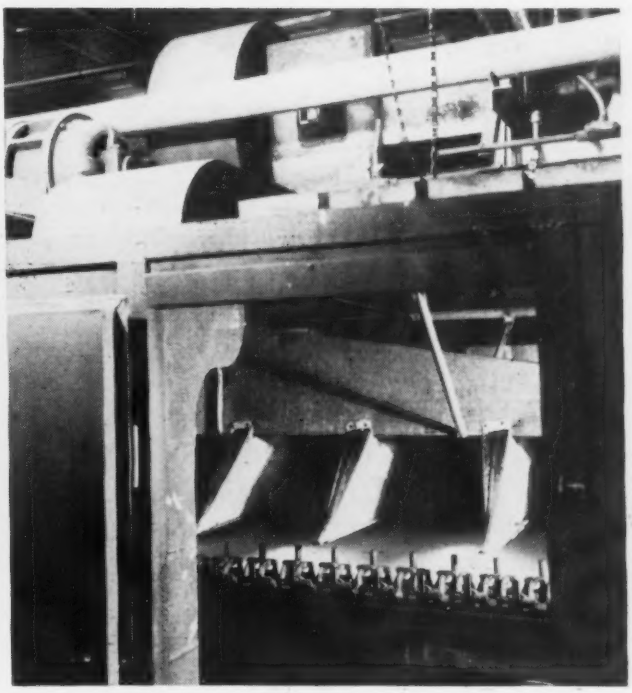
Baffle arrangement forces heated air through cloth with pulsating velocity. This pumping action is important to drying rate and uniformity. Fan volume is 6,000 cfm., heating and recirculating air 24 times per minute.

bellying. A large volume of air is not necessary, as the drying medium is continually dehumidified by the burners. Air moisture present is kept in a superheated state. What is really being used for drying is not air, but inert products of combustion and superheated water vapor, both of which have a great affinity for water. A reducing atmosphere of this nature eliminates any oxidation which takes place when heated air is used for drying. Fabrics with resin finishes can be dried and cured in just one passage through the tenter. Selvages come from the machine as dry as the rest of the cloth because the clips are maintained at a higher temperature.

Maintenance of the machines is very low. Lint accumulation inside the dryer is nonexistent because of consumption of the particles as lint passes through the burner flames from the return ducts. The only source of maintenance is the gas-generating unit, usually requiring about one hour every two or three weeks.

. . . avoids some heat loss, eliminates long heating-up periods





NOZZLES ABOVE AND BELOW CLOTH . . . DRY WITHOUT OXIDATION, PREVENT BELLYING

Fabric in the tenter dryer is dried by a combination of inert products of combustion and superheated water vapor. Both have great affinity for water. Selvages are dried at the same time as the rest of the fabric by the heated clips. Lint accumulation is prevented by dust being consumed by burners.

TABLE I. Metallic-roll diameter equivalents (to cushion roll)

Diam.	Pitch	Equivalent Dia.
1 3/8 in.	32	1.83 in.
1 3/8 in.	16	1.90 in.
1 1/8 in.	32	1.50 in.
1 1/8 in.	24	1.60 in.
1 1/4 in	16	1.83 in.
1 in.	32	1.33 in.

TABLE II. Draft distribution on drawing frame for 6-ends and 8-ends up drawing

(A) Ends up	6	8
(B) Gr. per yd. of back sliver	52	52
(C) Total gr. to back (A × B)	312	416
(D) Gr. per yd. front	54	54
(E) Total draft (C ÷ D) actual	5.78	7.70
(F) Total gr. reduction (C − D)	258	362
(G) Number of drafting zones	3	3
(H) Gr. reduction per zone (F ÷ G)	86	120.7
(I) Gr. per yd. from first zone (C − H)	226	295.3
(J) Draft first zone (C ÷ I)	1.381	1.409
(K) Gr. per yd. from second zone (I − H)	140	174.6
(L) Draft second zone (I ÷ K)	1.614	1.691
(M) Gr. per yd. third zone (K − H)	54	54
(N) Draft third zone (K ÷ M)	2.593	3.233
(O) Total draft of frame (J × L × N)	5.78	7.70

TABLE IV. Typical organizations for drawing frames

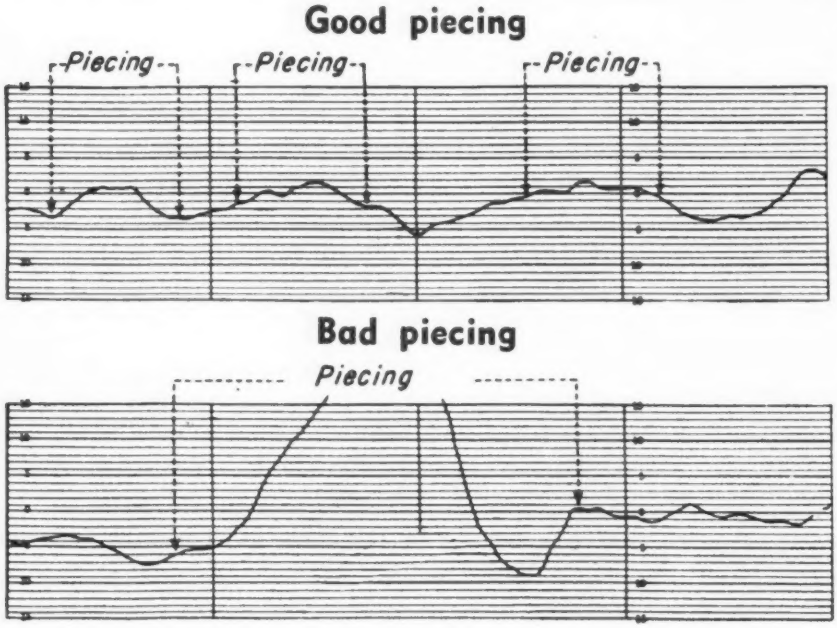
	Breaker	Finisher
Type of roll	metallic	cork
Gr. sliver front	59	66.5
Gr. sliver back	52	59
Draft constant	246	229
Draft gear	46	43
Draft	5.29	5.33
Sliver used for	fin.	1.25 hk.
Rpm. front roll	343	358
Dia. front roll	1 3/8 in.	1 1/4 in.
Lb. per hr. 100%	24	23.5
Actual lb. per hr.	19.2	18.3
Efficiency 5-delivery frame	80%	80%
Length staple (classified)	1 1/16 in.	1 1/16 in.
Maximum length staple	1 9/32 in.	1 9/32 in.
Roll set front-to-second	1 3/8 in.	1 5/16 in.
Roll set second-to-third	1 1/2 in.	1 7/16 in.
Roll set third-to-fourth	1 3/4 in.	1 5/8 in.
Tension gear	67	67
Trumpet	0.140 in.	0.135 in.
Step gage to calendar roll	1 1/8 in.	1 1/8 in.
Full can gears	none	20/82

TABLE III. Drawing-frame-trumpet sizes

Gr. Sliver	Breaker Drawing			Finisher Drawing		
	In.	Drill	64ths	In.	Drill	64ths
40	0.120	31	8	0.113	33	7
45	0.130	30	8	0.120	31	8
50	0.138	29	9	0.125	30	8
55	0.145	27	9	0.132	29	8
60	0.150	25	10	0.140	28	9
65	0.158	22	10	0.143	27	9
70	0.160	20	10	0.150	25	10
75	0.170	18	11	0.155	23	10
80	0.175	16	11	0.160	20	10

Cotton Mills Make Better DRAWING SLIVER

By SETH CARTER

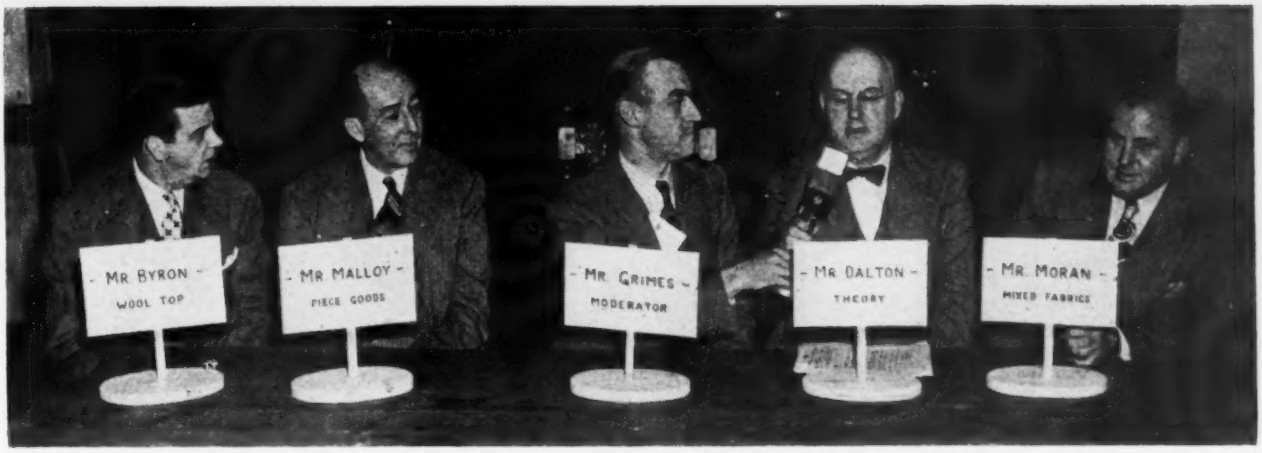


Sliver-tester diagram at top compares sliver piecings made by properly instructed operators with one made by uninstructed operator. Courtesy Saco Lowell

HIGHLIGHTS: *Mills set drawframe rolls to maximum staple length, instead of classified length, to prevent fiber damage—Difference at one mill amounted to ¼ in. between front and second roll—Draft-distribution tables and better methods aid mills' program for top quality of drawing sliver.*

OPERATION AND MAINTENANCE improvements have produced better drawing sliver in mills in which supervisors analyzed the "why" of sliver problems. Such mills frequently obtained improved drawing sliver from old machines that they would like to replace but cannot because of slow delivery of new equipment. Some old machines have produced sliver that paid off in improved spinning and weaving efficiency. Indirectly, they answered two questions that plague the operation of the drawing frame—how to improve a process that is perhaps the simplest in the mill and

(Continued on page 294)



The board of experts who responded to the critical questioning of the AATCC audience on wool finishing methods.

WOOL FINISHING Technology Bared at AATCC Meeting

HIGHLIGHTS: *Four-man panel answers barrage of questions—John Dalton analyzes theory of wool dyeing—Cy Byron tells how to handle chlorinated tops—Tom Malloy gives practical tips on dyeing wool piece goods—John Moran helps those who finish wool-nylon blends.*

WET PROCESSING OF WOOL was the subject tackled by a four-man panel at a recent meeting of the Northern New England Section of the American Association of Textile Chemists & Colorists at Andover, Mass. Prepared questions, plus questions from the floor, needled the experts; and valuable data on modern thinking and practice in wool finishing resulted.

G. O. Linberg, chairman of the section, opened the meeting. Henry Grimes, of American Woolen Co., was moderator of the panel. The four experts were carefully chosen to represent important subdivisions of the field, and the questions were allotted to each accordingly. To cover "theory," John N. Dalton, of Pacific Mills and consulting editor of TEXTILE WORLD, was chosen. Tops were covered by C. J. Byron, of Barre Wool Combing Co.; piece goods by Tom F. Malloy; and mixed goods, including blends, by John B. Moran.

The questions and answers are given herewith grouped under the name of the authority who shared his knowledge and experience with the audience.

By John N. Dalton of Pacific Mills —On theory.

What advantages has diammonium phosphate in acid and/or in chrome dyeing?

I would say that diammonium phosphate is not suitable for dyeing wool with the so-called level-dyeing acid colors. However, it is of considerable value in the dyeing of chrome and neutral or milling types of wool dyes. These dyes consist of highly aggregated molecules in solution. The rate of diffusion of such large molecules in water is inversely proportional to their particle size. At the same time, these molecules have colloidal anions of relatively great electrostatic charges. Consequently, they have high affinity for the positively charged wool fiber at temperatures well below the boiling point of water.

In use of these dyes, diammonium phosphate may function as follows:

1. The pH of a 5% solution is 7.85 at 65° F., decreases to a pH of 7.3 at 212° F., and, after 1½-hr. boil, decreases to 5.78.
2. With its high pH, it provides additional hydroxyl ions which tend to neutralize any positive electrostatic forces on the wool fiber.
3. While it is so functioning, the dye aggregation is decreasing as the temperature is increased, and the rate of diffusion or of dyeing is increased as more available sites for adsorption are provided through the increased swelling of the fiber at the higher temperatures. Due to its slow rate of decomposition with slightly increasing acidity, the rate of dyeing or diffusion is well controlled, while continuing the dyeing operation at as near the boiling point as possible.

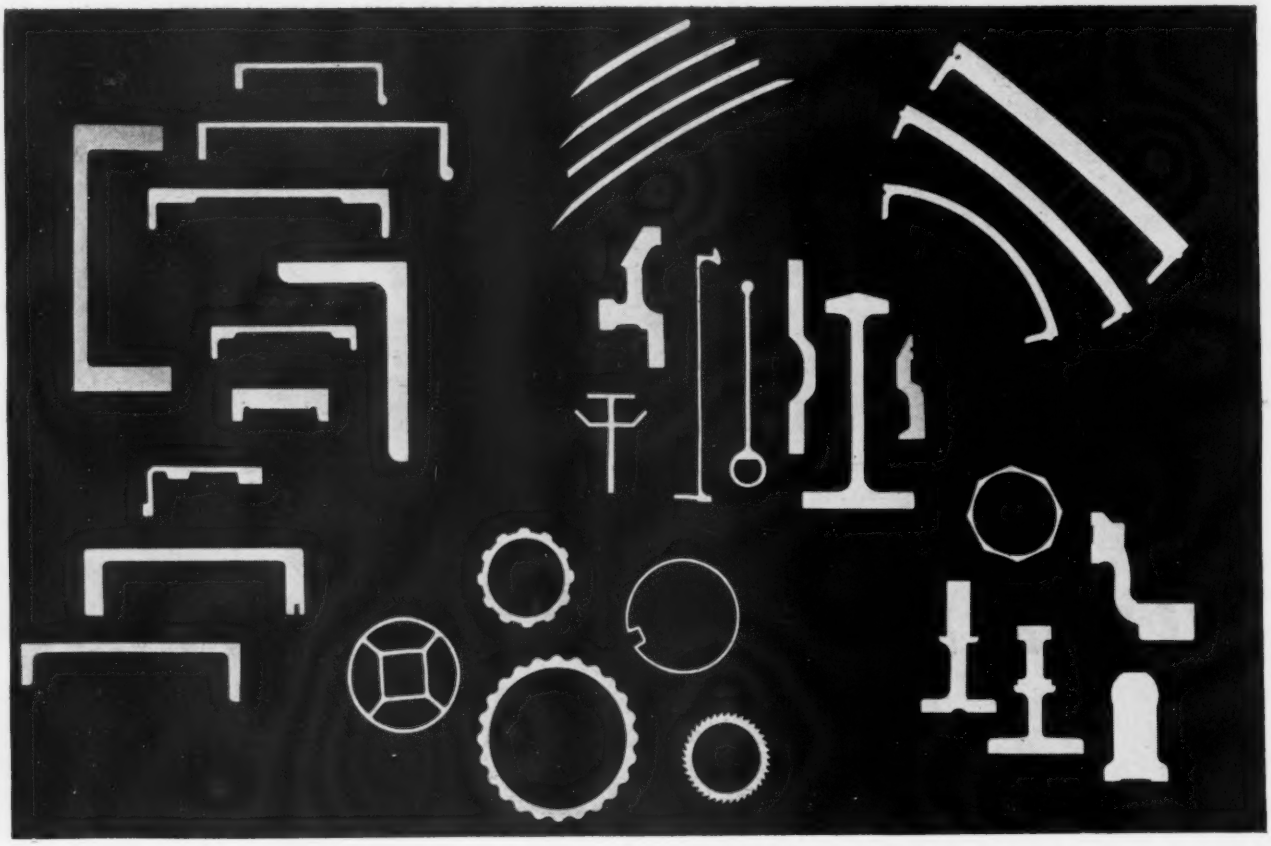
Does use of diammonium phosphate take place of chrome bottom dyeing, or is it used in that?

It does not take the place of chrome bottom dyeing; it is an assistant in chrome bottom dyeing. It is also an assistant in chromate dyeing and in neutral dyeing. The dyeing assistant that you use depends largely upon the affinity of the dye for the fiber. Naturally, you wouldn't use a dyestuff that does not exhaust at a pH of 7 with diammonium phosphate.

Where there are weaving imperfections, does the use of diammonium phosphate in the chrome process eliminate to any degree chrome bottom dyeing? Has it an advantage over that?

What we are all looking for in piece dyeing is to have the dye homogeneously distributed throughout the whole mass of the fabric, and also well penetrated. If you swell the fiber sufficiently, decrease the aggregation, and increase the rate of diffusion or

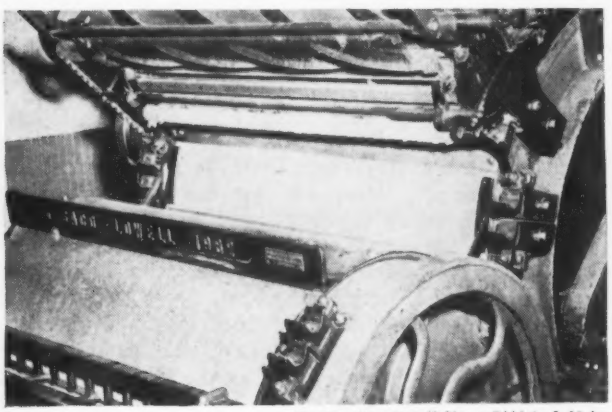
(*Continued on page 266*)



Extruded aluminum shapes *used in textile machinery include, at left, spindle rails, roller beams, and ring rails for spinning and twisting; top center, casing plates for cotton cards; top right, segments for woolen card and doffer cylinders; bottom center, lap rolls, guide rolls and stock shells used in carding, combing, drawing, and finishing; center, miscellaneous sections; bottom right, roving-frame shapes.*

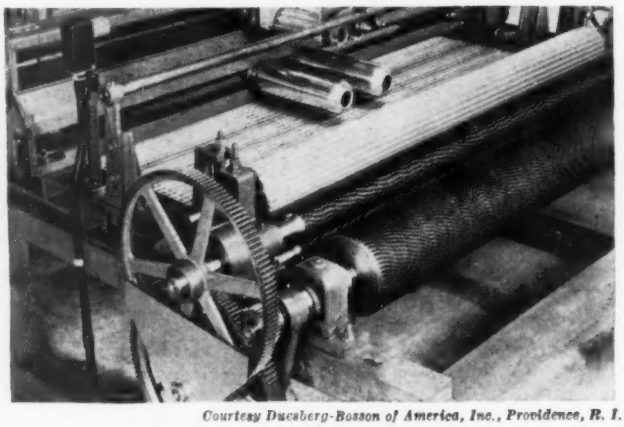
ALUMINUM Widely Used On Textile Machines

HIGHLIGHTS: *Extrusions, tubing, sheets, castings, and forgings all employed—Light weight speeds up some processes and aids fabrication—Resistance to rust and lessened maintenance are features—Anodizing used for surface protection.*



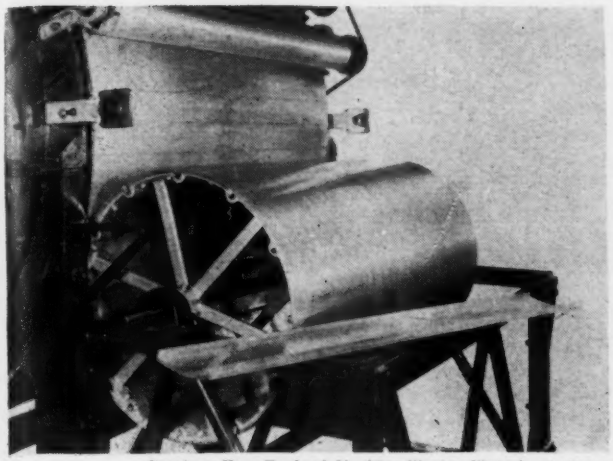
Courtesy Saco-Lowell Shops, Biddeford, Maine

Casing plates *in Saco-Lowell's cotton card, as shown in this picture, are made of hard aluminum alloy extrusions. The bending and beveling operations, necessary on the steel plates formerly used, were eliminated by the use of extruded aluminum shapes.*



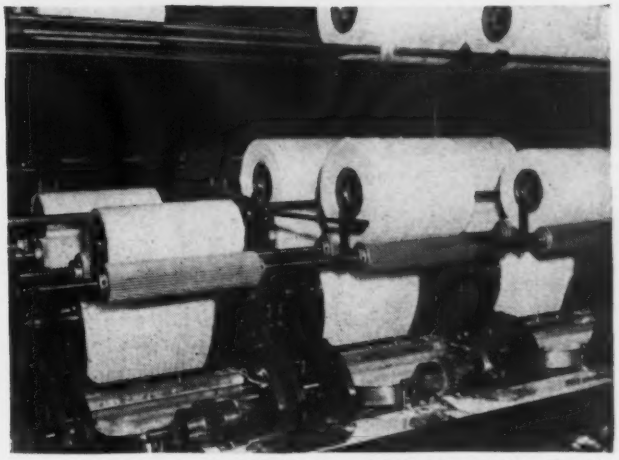
Courtesy Ducaberg-Bosson of America, Inc., Providence, R. I.

Fluted pressure roll *in Duesberg-Bosson's intermediate center broad-band feed table for woolen cards is made of aluminum. Replacing wooden rolls, which caused trouble from splintering, cracking, and wear, the new rolls are lighter, stronger, and more durable.*



Courtesy New England Machine Works, Waterbury, Conn.

***One-cylinder** woolen card has a 36-in. doffer cylinder and a 96-in. main cylinder, both built up from extruded aluminum segments. Cards are undergoing service tests. Aluminum is also used for worker and fancy rolls, fluted guide rolls, and cast roll-bearing arms.*

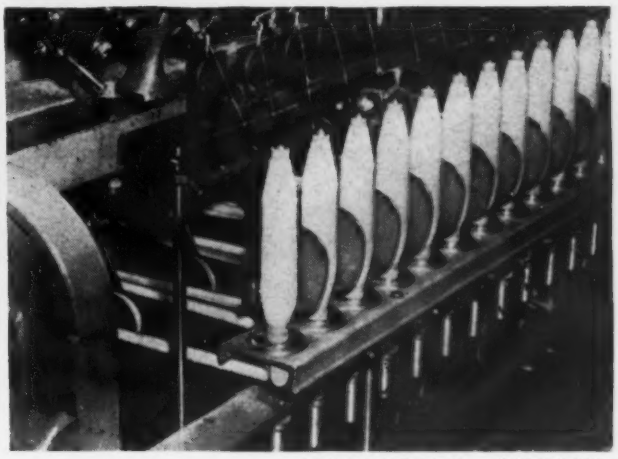


Courtesy Saco-Lowell Shops, Biddeford, Maine

***Hollow extruded** aluminum lap rolls in combers and drawing frames have replaced old-style steel rolls which had to be machined from pipe. The aluminum rolls are extruded to finished size and are given an anodizing treatment to increase their surface hardness.*

Courtesy H & B American Machine Co., Pawtucket, R. I.

***High-draft slubbers** and roving frames made by H & B American Machine Co. use aluminum extrusions instead of cast iron in snug (step) and bolster rails, top and bottom snugs, and roller beams. Sliver lifting rolls, formerly made of wood, are now made from hollow extruded aluminum shapes. Casing-off plates and creel boards are formed from aluminum sheet.*



Courtesy Saco-Lowell Shops, Biddeford, Maine.

***Replacing steel** rails of nearly three times their weight, aluminum ring rails are now generally used in cotton spinning frames, such as the Saco-Lowell frame shown here. Section thickness of the extruded aluminum rail is the same as that of the steel rail formerly used, except for the flanges which are increased in thickness to provide rigidity. Separator blades are die-cast aluminum.*

By H. V. MENKING, *Industrial Machinery Div., Reynolds Metals Co.*

ALUMINUM HAS RECENTLY ENTERED the field of textile machinery and equipment on a broad scale. In form of extrusions, tubing, sheets, castings, and forgings, it is now used in innumerable applications in carding machinery, roving and spinning frames, twisters, knitting machines, in looms, finishing plants, and in a host of related applications. The introduction of aluminum in important structural members such as lay beams, spindle rails, roller beams, and ring rails, and in such applications as slasher beams and loom beams, has resulted in both machine improvements and operating economies.

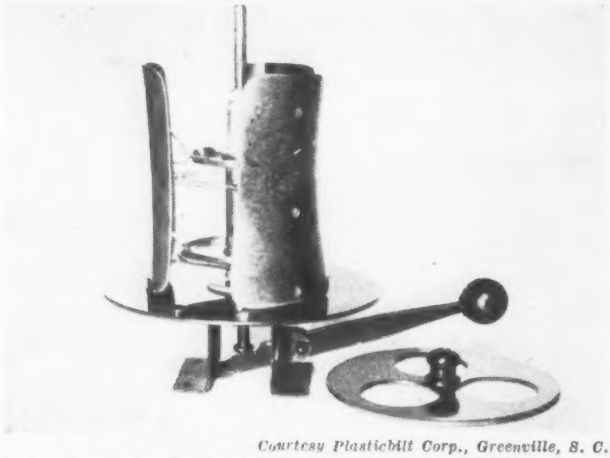
The lightness and strength of aluminum permit reduction of dead weight; the inertia of machine parts rotating or reciprocating at high speed can be cut down. Operating speeds often can be increased, and machines run more smoothly. Shipping costs may be lessened, and manual handling is made easier and safer.

Because aluminum cannot rust, it is widely used in equipment exposed to steam and water. In ordinary atmosphere, aluminum parts retain their bright metallic finish. Moisture condensing on aluminum cannot produce rust to drop down and contaminate yarn or cloth being processed. Its excellent resistance to corrosion suggests the use of aluminum under many conditions of exposure to acid atmospheres and solutions.

Maintenance cost is low. Machine parts made of aluminum are free from the dimensional changes, warping, and splintering often associated with some non-metallic materials. This permanent dimensional accuracy, coupled with light weight, improves the dynamic balance of machine members running at high speeds and reduces vibration, a major source of maintenance and repair costs. Moreover, painting maintenance cost is very low, since in most common textile-mill environments, aluminum needs no paint.

PREPARATION. In the preparatory processes, in which raw fiber is cleaned, combed, and prepared for spinning and twisting, aluminum tubing, extrusions, sheets, and die castings are used in a number of applications.

Aluminum cylinders of 3S and

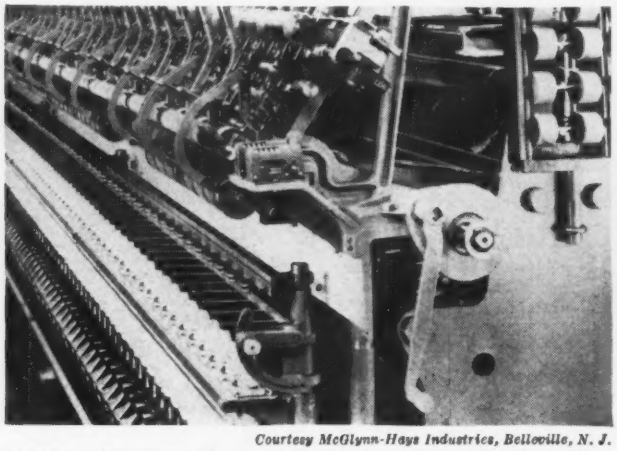


Courtesy Plasticbilt Corp., Greenville, S. C.

***Expanding cake holder** of composite plastics and aluminum construction is a relatively new item.*

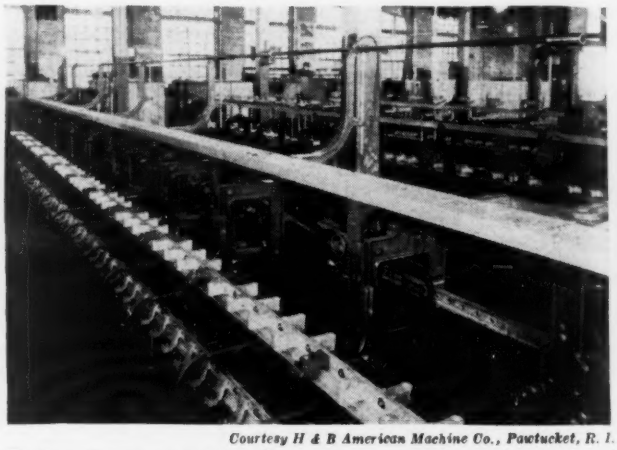
Courtesy H & B American Machine Co., Pawtucket, R. I.

***Aluminum sheet** is used for doors, gear covers, and casings of cotton spinning frames.*



Courtesy McGlynn-Hays Industries, Belleville, N. J.

***Taking advantage** of aluminum's lightness, dimensional stability, and freedom from rust, McGlynn-Hays uses extruded aluminum spindle rails, ring rails, and bolster rails; drive cylinders built of drawn aluminum tubing; and various aluminum castings.*



Courtesy H & B American Machine Co., Pawtucket, R. I.

***Roving frame** on erection floor, shows extruded snug (or step) and bolster rails, aluminum snugs cut from extruded shapes, and extruded aluminum roller beams. Illustrated here is equipment by H & B American Machine Co.*

R361-T6 alloys in diameters from 6 to 12 in. are used extensively in woolen card rolls, where their light weight increases operating efficiency and facilitates handling when the rolls are removed for cleaning and stripping. Aluminum main card and doffer cylinders built up from extruded segments are in experimental use and show signs of promise.

Curved guide plates or card casings in cotton cards are made of 14S-T6 and 24S-T4 alloy extruded aluminum shapes. Use of extrusions eliminates the necessity of forming and machining the steel plates previously used. Aluminum surfaces contacted by the cotton fiber are anodized to improve resistance to wear. In cards and on feed tables, extruded corrugated aluminum guide rolls have replaced wooden rolls and welded steel rolls. Elimination of splintering and rusting and reduction of cost were the governing factors in favor of aluminum. Apron slats made of aluminum are replacing wooden slats in feed tables, because they are splinterproof and do not warp.

In roving and high-draft slubber or speeder frames, R361-T6 and 63S-T6 alloy aluminum extrusions are used for step-and-bolster rails (or snug rails) and for roller beams, previously made of cast iron. Extrusions are preferred because they are furnished practically without any machine finish, thus eliminating both the initial cost of the extra metal and the expense of removing it. Moreover, in members with reversing motion, the weight reduction attained through use of aluminum leads to smoother operation and permits reduction of counterbalance weights.

Sliver lifting rolls of octagonal cross section, used in roving frames and made of wood in the past, are now made of thin-walled hollow 63S-T5 aluminum alloy extrusions.

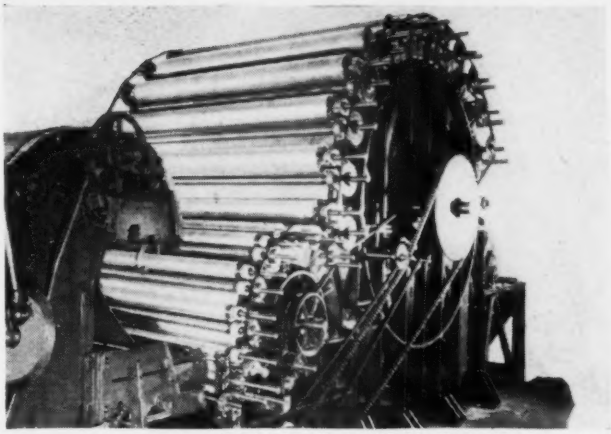
In drawing frames, aluminum extrusions, tubing, and castings are beginning to replace both cast iron and steel.

Lap rolls of hollow R361-T6 and 63S-T6 aluminum extrusions with a hard anodic finish are successfully used in cotton combers and on drawing frames.

The use of aluminum die castings has made rapid strides in this field, in which for many years cast iron was the standard material for castings. Elimination of nearly all machining stock and machining time through use of die castings has resulted in radical cost reduction of such parts as roll stands in drawing frames, brackets, and many other castings. The finished aluminum die casting generally proves more economical and often considerably so, than the finished cast-iron part.

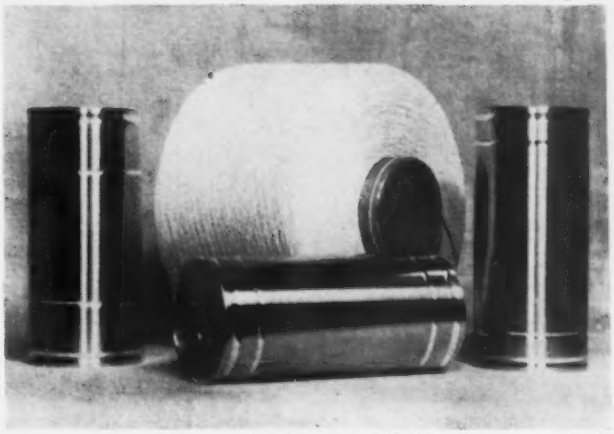
In viscose rayon spinning, aluminum spinning buckets have been in use for a number of years. The buckets are machined from forgings to resist the high centrifugal stresses caused by the spinning process. To prevent corrosive attack from the spinning solution, which contains a high concentration of sulphuric acid, the aluminum buckets are coated with a film of phenolic resin.

Aluminum extrusions, tubing, and sheets are used in the form of traverse



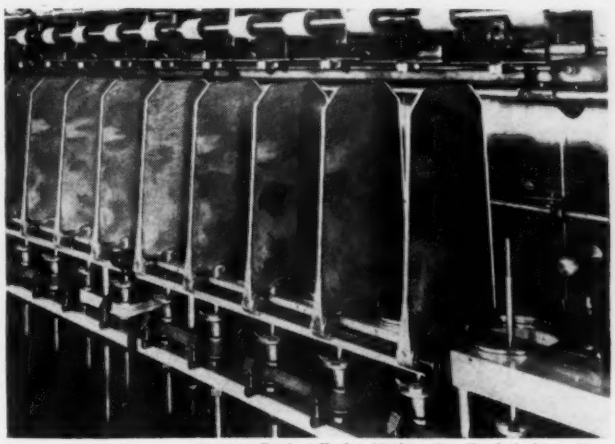
Courtesy New England Machine Works, Waterbury, Conn.

***Worker rolls** of extruded aluminum used in one-cylinder woolen card facilitate handling and increase efficiency.*



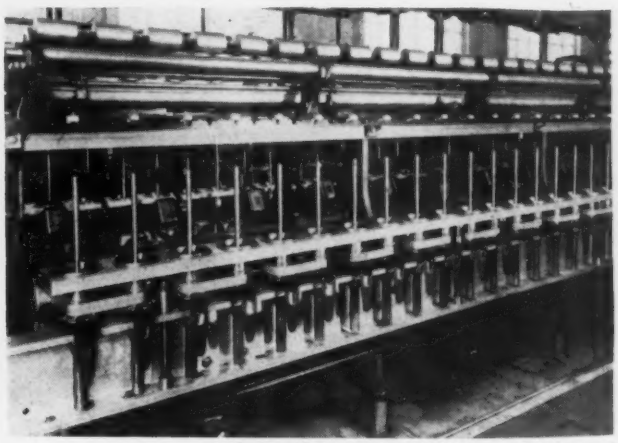
Courtesy Evans Specialties Co., Danville, Pa.

***Headless package** bobbins machined from aluminum tubing have longer life and greater strength than old-style non-metallic bobbins.*



Courtesy Davis & Furber Machine Co., North Andover, Mass.

***In worsted spinning frames** such as Davis & Furber's Simplex machine shown here, aluminum finds application in die-cast separator blades and extruded ring rails, spindle rails, and roller beams. Replacing cast iron, the aluminum rails were extruded to finished size.*



Courtesy H & B American Machine Co., Pawtucket, R. I.

***Cotton twisters** and spinning frames utilize extruded aluminum in spindle rails, ring rails, and roller beams, and sheet aluminum in creel boards, doors, casings, and gear covers. Aluminum spindle rails, replacing cast-iron rails have capacity for absorbing vibration.*

bars, guide holders, doffing boards, spinning spools, spool holders, and skein holders. Most of these parts are coated, although they are not in continuous contact with any solution. Sheet parts in rayon-spinning rooms include gear covers and spinning compartment covers. Gear housings, doors, and cover panels which frequently have to be handled are made of aluminum sheet, generally of 3S or 52S alloys.

SPINNING. In cotton and wool spinning frames, especially, the use of aluminum extrusions and die castings has radically changed customary methods of design and construction based on cast iron and steel.

Extruded aluminum ring rails, made of R361-T6 alloy, have replaced steel and cast-iron rails in the frames of most manufacturers. Ring holes are readily punched out even when section thicknesses vary. Reduction of counterbalance weights, made possible by the light aluminum rail, and elimination of painting maintenance have placed the extruded aluminum rail on a cost level with the steel rails previously used.

Roller beams and spindle rails are further examples of aluminum extrusions now widely accepted in spinning frames. Low first cost, elimination of machining, and the possibility of designing extrusions for greatest functional utility were the prime factors responsible for the choice of aluminum. As these members are stationary, their light weight is not important from an operating standpoint but has greatly reduced shipping and erection costs. R361-T6 and 63S-T6 alloys are generally used.

Drive cylinders in spinning frames, made of drawn strong-alloy aluminum tubing, such as 24S-T4 and 14S-T6, and machined to the desired diameter, have proved successful in several installations.

In mule spinning frames, aluminum extrusions for spindle rails and collar boards, and die castings for brackets and other parts offer cost and weight savings and are increasingly used.

In rayon and cotton twisters, extruded aluminum ring rails, rolled or extruded traverse bars, and die-cast aluminum ring holders have become standard equipment.

Separator blades stamped from 52S-1/2H and R361-T6 or R361-T4 aluminum sheet are used in rayon, cotton, and wool equipment. In the synthetic-yarn field, it is customary to give such separators one of the standard anodizing treatments to prevent any possibility of marking of the yarn. Die-cast separator blades have given excellent service for a period of many years.

Creel boards, doors, covers, guards, and other sheet parts of spinning and twisting frames are extensively made of aluminum because they eliminate the need for painting and are easier to handle.

Top rollers in twisters are machined from aluminum rod or die cast. In automatic winding machines, aluminum die castings have found extensive use. Other uses will be described in subsequent articles.

THROWSTER SAVES . . . KNITTERS HOLD QUALITY

Sunoco Fibrlub L-220 Lubricates Nylon Thread Better, Protects the Size, Reduces Breakage

One of the country's leading nylon throwsters, always interested in improving the quality of his output, ran comparative laboratory and plant tests on various coning oils. Of all these products, the best results were obtained from Sunoco Fibrlub L-220.

It eliminated preferential pick-up. It lubricated the thread better, protecting the size and reducing breakage. Along with economies in production it brought substantial savings in the cost of processing oil. Four out of five of the knitters to whom sample cones were sent for testing could not tell those processed with Fibrlub apart from those treated with vegetable coning oils, which are more costly.

The result of all this was adoption of Fibrlub as the standard coning oil; and the plant has been using it exclusively for two years.

Fibrlub L-220 is used neat in the trough of cone winders. It is applied to protect the size already added. It will not become rancid, and retains its pleasant odor. All the ingredients being compatible, no change in viscosity or composition takes place—there is no undesirable variation in the amount of oil picked up. For complete information about this economical, "Job Proved" nylon coning oil, call or write the nearest Sun Office.

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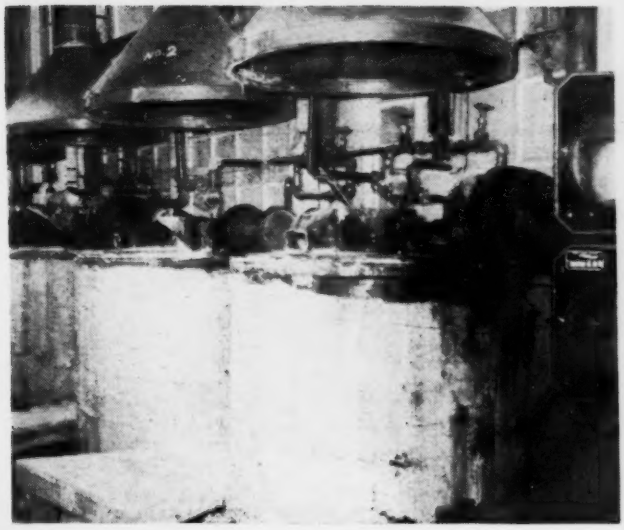
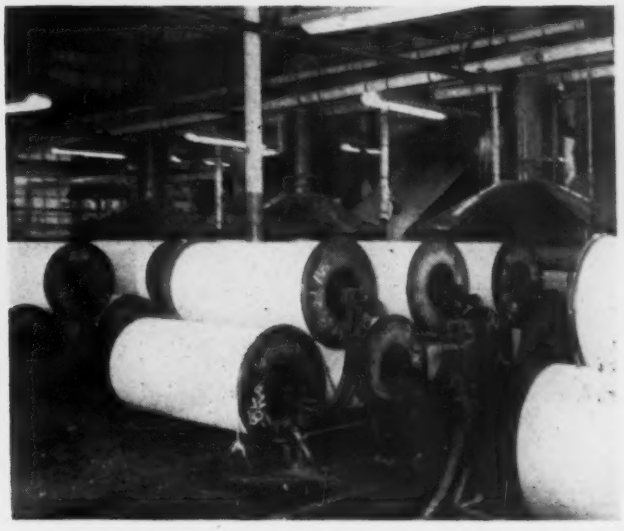


Size-cooking kettles (42 in.) and storage kettles (one 42 in. and one 60 in.) are equipped with Taylor automatic controls and hot-air-exhaust hoods.



The four two-cylinder slashers are located between the warper room and weave room. They are arranged for straight-line flow of stock.

SLASHER-ROOM Improvements Up Production and Quality

HIGHLIGHTS: *Automatic controls featured in Anniston Mfg. Co.'s improved slasher room—Equipment rearranged for more working space and straight-line flow of stock—Addition of fourth slasher increased capacity 33%.*

By E. DALTON WHITE

SUBSTANTIAL IMPROVEMENT in operation, efficiency, and quality has been gained by Anniston Mfg. Co., Anniston, Ala., in its slasher room by the installation of automatic controls, rearrangement of equipment, and the addition of a slasher. The changes, made as part of a broad modernization and expansion program, have increased unit production and made automatic most of the slasher operations.

The production of the mill is in drills and twills, with warp numbers of 13.50, 16, and 17.50 and ends varying from 2,100 to 2,800 per warp. The 13.50s are run at 30 yd. per min., 16s at 34 yd. per min., and 17.50s at 40 to 42 yd. per min. Moisture control is regulated by cone drives, and the stretch is held at 2.5 to 3.0% by handwheel friction. Temperature is automatically controlled and is varied for different-sized yarn. Four Saco-Lowell two-cylinder slashers are used.

SPEED CONTROL. Carefully calibrated cone drives for speed variation have given good results. The arrangement is easily checked and controlled. Periodically, tachometer checks are made to insure that correct speed is being maintained; and when necessary, adjustments are made for speed and for belt slack.

Temperature controls on the slashers are set so that when the pressure is at 15 lb. all valves are closed. When the pressure drops to 13 lb., the steam valve opens, allowing a small amount of steam to enter the cylinder to maintain an even temperature.

Should the pressure drop to around 10 or 11 lb., the pilot valve actuates the condensate valve to permit steam to pass quickly through the cylinder and out the condensate valve until the temperature is brought back to the proper level. As the cylinder temperature is brought back to peak, the controlling air pressure closes the condensate valve, and less steam is allowed to flow into the cylinder.

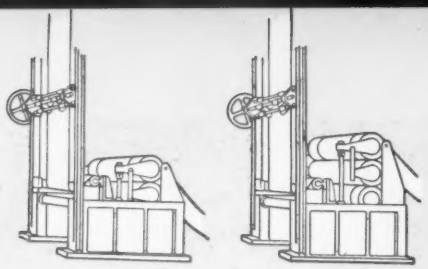
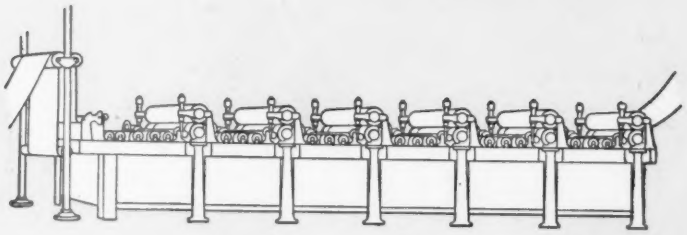
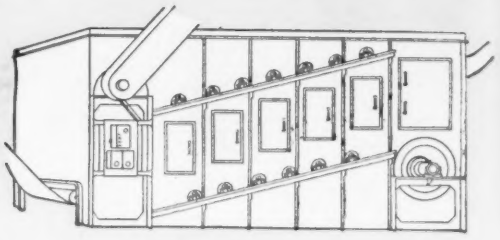
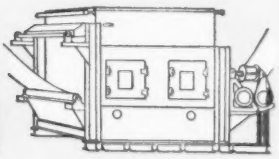
Condensate from the cylinder of each slasher is siphoned off to a central hot-water trap. As an emergency precaution, a hand-operated valve has been installed to remove the condensate and to blow steam through the cylinder to maintain proper heat.

SQUEEZE ROLLS. Front and back squeeze rolls are covered with 18 oz., 100% wool blankets. All blankets on the squeeze rolls are changed every ten days to two weeks, depending on slasher operations. A new blanket is put on the back roll and run for two to three days and is then switched to the front roll. This practice is followed in order to prevent skips and obtain more uniformly sized yarn. As the ends of the blankets become ragged or hard, strips are torn off until a complete blanket change is necessary.

Automatic controls have been installed on the three 42-in. size-cooking kettles and the one 42-in. and one 60-in. size-storage kettles. Size ingredients, water, temperature, and cooking time are carefully controlled for each batch to obtain uniformity from batch to batch.

When cooking is started, the temperature in the kettle is brought up to 210° F., and the size is cooked for about 1 hr. Before it is pumped to the size-storage tank, sufficient water is added to the mix to bring it up to the proper number of gallons. It is maintained at boiling temperature un-

(Continued on page 294)

Take two  add a high-speed  and a special-type  and the new Butterworth 

RESULT: You have a complete 2-stage Butterworth Continuous Dyeing Range—for vat colors, sulphurs indigisols and naphthols. It's the *one* all-purpose range.

Compare the savings over jig work—⅓ less floor space, 40% reduction in chemical costs, yardage per man hour of labor increased up to 50%. Color costs are equal or up to 25% less on certain classes of goods.

The Butterworth pad steam range will cut your costs from 10% to 35% *even if you are doing conventional continuous reduced or pigment work.* And you will get full jig money value and fastness with shading controlled throughout the run.

The complete Butterworth pad steam range requires a space only 110x10 feet to run 6,000 yards an hour. Goods enter a 2-roll padder in which color is applied in pigment form, followed by drying on a special-type hot flue dryer. Goods are then impregnated with chemicals on a 3-roll padder and enter a steamer. After steaming, goods pass through a water seal and squeeze rolls and are washed in a high-speed compartment washer.

The Butterworth Continuous Dyeing Range is designed to allow easy access for threading. Tensions are adjustable for various rabrics. Liquid boosters can be added to meet specific mill conditions.

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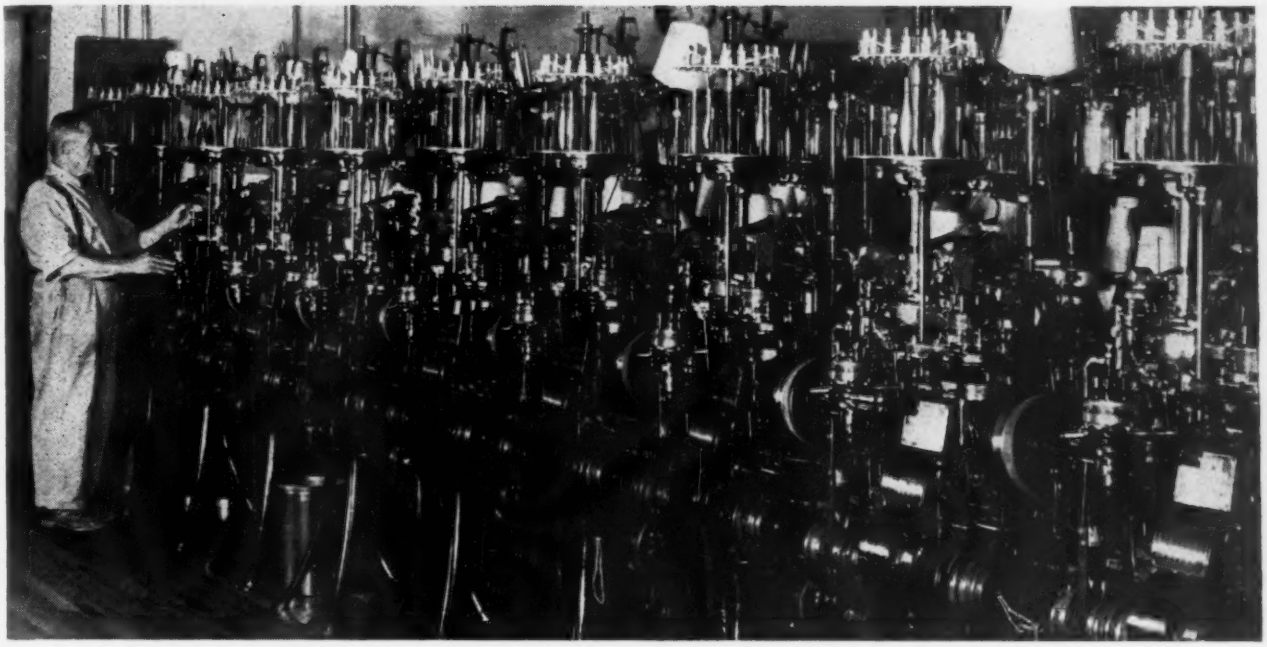
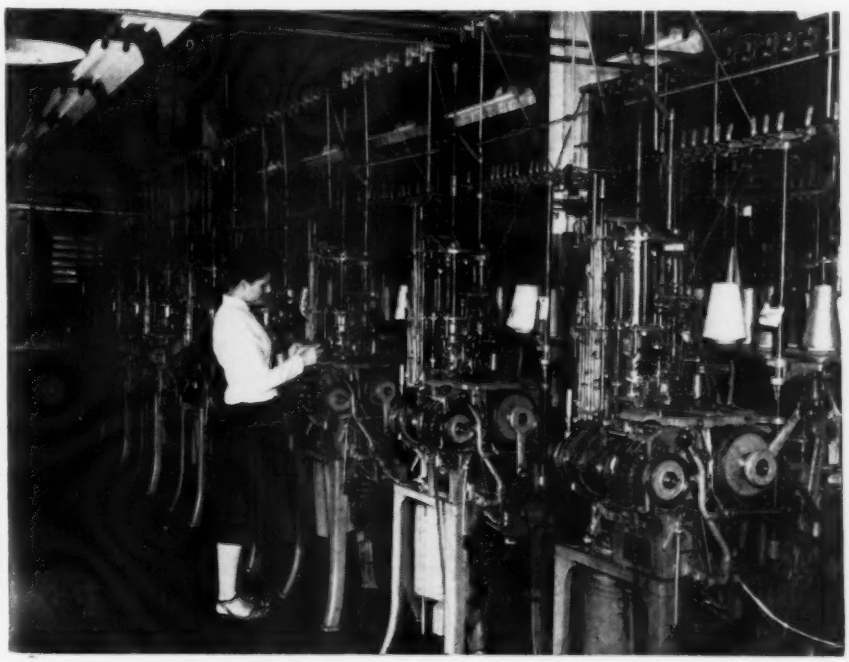
Photos By Mal Bowden



Fancy seamless hose in argyle patterns are produced on Waldensian's brand-new Hemphill wrap-reverse machines.

Waldensian Makes Another SEAMLESS FIRST

HIGHLIGHTS: *Waldensian Hosiery Mills, Valdese, N. C., installs many new and varied seamless machines—Hemphill wrap reverse and Scott & Williams Komet links and links feature new equipment—400-needle seamless production efficiency is 77%.*



Features of the new Scott & Williams links-and-links Komet machines at Waldensian Hosiery Mills include eyelet closing device, improved brake shoes, new pattern-chain control.

By C. MALLARD BOWDEN
Southern Editor, TEXTILE WORLD

WALDENSIAN HOSIERY MILLS, Valdese, N. C., are among the first mills to install Scott & Williams HH-PW machines. The mills were said to be the first seamless users of fluorescent lighting, of Hemphill's wrap-reverse and the older Hemphill Banner machines, of line-shaft speed-reducing systems, of "dry-system" sprinklerage, of incentive systems designed especially for a half-hose plant, and of a number of other technical and managerial advances.

Waldensian manufactures a wide variety of seamless hose at the Pauline Mill where Ben Grill is superintendent and John C. Simmons is assistant superintendent. Their employees benefit from progressive ideas, air conditioning, plant-wide music, modern interior and surroundings, and other advantages. But, these accomplishments do not tell the whole story.

GOOD EQUIPMENT. Waldensian's strength lies also in modern, up-to-date knitting machines. For example, they have 36 brand-new Hemphill wrap-reverse machines which produce argyle

(Continued on page 300)

The new Approach to

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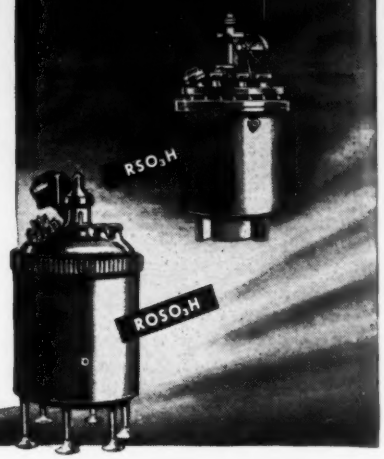

Less than twelve months ago General Chemical Research introduced SULFAN—Stabilized Sulfuric Anhydride—to the Process Industries. Even in that short space of time, many using SULFAN have predicted it may well "rewrite the book on sulfonation and sulfation!"

Important among the many reasons for this belief is the fact that SULFAN provides Sulfur Trioxide in stable, easy-to-use liquid form for the first time in chemical history.

In sulfations as well as in both mono- and poly-sulfonations, it offers multiple advantages:

- Eliminates costly, time-consuming neutralization and washing steps.
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Already finding a place in the textile, dyestuff, detergent, pharmaceutical, plastics and general organic chemical industries, SULFAN may hold a rich potential for your operations, too. Write for samples or commercial quantities.

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Reactions of SO_3—Comprehensive, selected abstracts and bibliography compiled by General Chemical Research.

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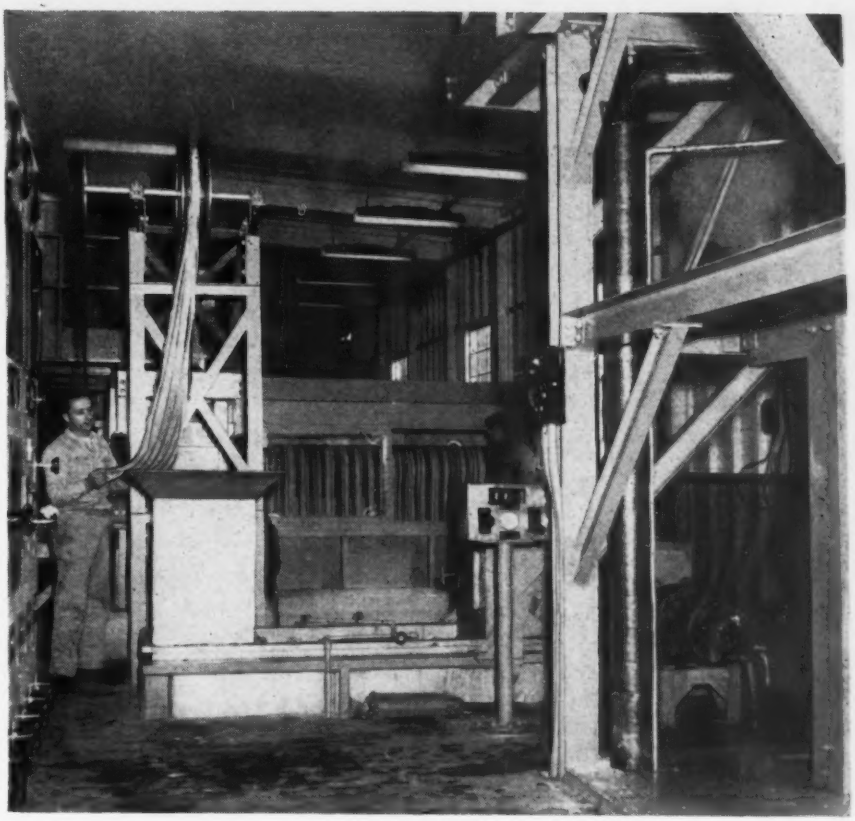
New BLEACHING RANGE Handles Startex Mills' Output

HIGHLIGHTS: *Chloride aids in towel bleaching by continuous method—Cotton-linen mixtures, both white and dyed, are bleached at high speeds—Instrumentation and chemical control insure satisfactory results.*

By EARLE MAULDIN
Southern Editor, TEXTILE WORLD



Gray goods *are shown here entering the bleaching unit which handles 1,250,000 yd. weekly.*

THE FIRST CONTINUOUS peroxide-bleaching range for bleaching cotton-and-linen blends has been put into operation at Startex Mills, Tucapau, S. C. It is an all-stainless-steel Du Pont system, built by the Greenville Steel & Foundry Co., Greenville, S. C.

Crash toweling of various types is being produced at the plant. Cotton-linen mixtures, containing vat and naphthol colors, are being bleached, as well as all-cotton fabrics, both white and colored. The fabrics vary from 8-yd. goods down to 4 yd. per lb. in 18-in. widths. The range has a capacity of 1,250,000 yd. per week, which is ample to handle the output of the mill, with capacity to spare.

The unit occupies a separate room built especially for it. The building is 25x150 ft. in the clear, which gives sufficient space around the machine for all necessary operations and accessory equipment. The ceiling height is 22 ft.

The bleaching unit is in three sections. In the first section is a gray washer, a caustic saturator, and a J-box. In the second or intermediate section there are two washers, a peroxide saturator, and a second J-box. The last section consists of a washer, a chemic (sodium-hypochlorite) saturator, a small J-box, and a final washer.

Power is provided by a Westinghouse 200-hp. variable-speed drive. An a.c.-d.c. motor-generator set provides current for individual variable-speed d.c. motors, a separate motor being used for each of the three sections of the range. A master rheostat controls the speed of the range, and separate rheostats control each group. The arrangement permits quick adjustment in the synchronization of the unit. All rheostats are manually operated. Speed is indicated by tachometers attached to each group. These tachometers are calibrated to read in yards per minute.

INSTRUMENTS. Instrumentation was planned and instruments were furnished by Brown Instrument Co. A remote-control pressure-reducing valve lowers the steam pressure from the boiler, where it is generated at 175 lb., to about 15 lb. The steam pressure is further reduced by expansion until it is substantially zero at the steam distributor in the heater tube. The supply line is provided with an air aspirator which further reduces steam temperature when desired. The cloth temperature can be automatically controlled at a predetermined level.

The amount of moisture in the cloth entering and leaving the saturator is regulated by means of pressure pneumatically applied to the squeezers. These rolls can be set to give any required pressure.

Hydrogen peroxide is received in tank cars and handled directly from the car to an all-aluminum storage tank, fabricated and furnished by R. D. Cole Mfg. Co., Newnan, Ga. From the storage tank, peroxide is pumped to small measuring tanks located near the make-up tanks. Aluminum piping, and stainless-steel pumps and make-up tanks are in service.

Sodium silicate is received in drums, dumped into and mixed in steel tanks, and then pumped to the make-up tanks. Caustic soda is mixed with silicate when required.

In the interest of uniformity of operation and high-quality work, an analysis of each of the saturator charges is made every quarter-hour while the machine is in operation.

The operation of the machine is simple. It has been found that a training period of about one week is all that is necessary for men who have had no previous experience along this line.

Changing styles of goods run on the machine is likewise a simple matter, and loss of production due to changes is almost negligible as so little time is required for the change-over.

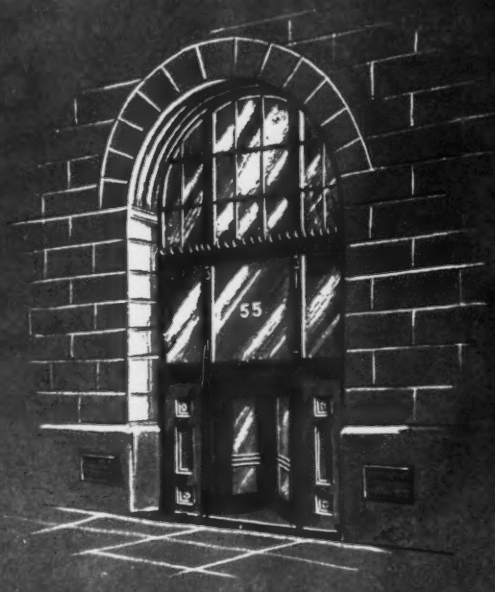


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Table I
MAXIMUM TOTAL SOLIDS IN BOILER SALINES
(ABMA and AI Specification)

Operating Pressure (lb. gage)	Concentration (ppm.)
0 to 300	3,500
301 to 450	3,000
451 to 600	2,500
601 to 750	2,000
751 to 900	1,500
901 to 1,000	1,250
1,001 to 1,500	1,000

Table II
RATIO OF SODIUM SULPHATE TO ALKALINITY IN BOILER SALINES
(ASME Recommendations)

Operating Pressure (lb. gage)	Relative Concentrations in Boiler Salines		
	Ratio Na_2SO_4	to	$NaOH + Na_2CO_3$ (Calculated as Na_2CO_3)
0 to 150	1	to	1
151 to 250	2	to	1
251 and over	3	to	1

BOILER FEEDWATER
Treatment Can Produce Savings

HIGHLIGHTS: *Waste of fuel and tube damage caused by unsuitable feedwater—High-pressure-boiler requirements stringent—Five constituents cause major feedwater difficulties—Steel and iron corrosion can be prevented inexpensively.*

By V. J. CALISE, *Technical Manager, Liquid Conditioning Corp.*

THE INTRODUCTION of unsuitable feed water to a boiler results in loss from waste of fuel and tube damage caused by: (1) insulating effect of scale; (2) repair costs resulting from corrosion and cracking (embrittlement) of boiler tubes and shell; (3) cost of more frequent cleaning of boilers, turbines, economizers, superheaters, and other auxiliaries; (4) increased investment necessary for additional boiler capacity to allow for rotation while cleaning; (5) decreased efficiency of boilers and turbines resulting from scaling, foaming, priming, and wet steam; and (6) increased depreciation of equipment.

Water requirements vary for boilers of different operating pressures and, in some cases, for boilers of different design operating at the same pressure. Water-quality requirements for low-pressure boilers are not as exacting as are those for high-pressure boilers.

The extensive use of turbines with steam pressures of 250 lb. per sq. in. gage (psig.) and above in place of reciprocating engines has complicated the problem of boiler feed water treatment. In addition to the previous requirements of avoiding scale formation, corrosion, priming, and foaming in the boiler, the water must now be treated to avoid salts and silica in the steam which may form deposits on the turbine blades. Requirements for high-pressure boilers have become so stringent that it is best to refer all inquiries for feed water treatment for boilers of 250 psig. or more operating pressure directly to reputable engineering firms for recommendations, particularly where turbines, economizers, stage heaters, etc., are used.

Where turbines are used, improper feedwater treatment will cause volatilization and carryover of salts and silica from the concentrated boiler salines. The result will be deposits on turbine blades and sharply reduced turbine efficiency. The turbine must be taken off the line for removal of the deposits. In the case of silica deposits, this is particularly difficult and involves chipping, sandblasting, chemical treatment, or a combination of these methods. One-day to one-week shutdowns of the turbine and the need for standby power facilities are generally necessary. Accordingly, reduction of silica to very low values in the feedwater has become the rule where turbines and higher steam pressures are used.

The chemical constituents which cause the major operating difficulties in boilers are hardness, silica, organic matter and color, alkalinity, and oxygen. Hardness and silica are mainly responsible for the objectionable scale deposits in the boiler, as well as deposits in super-heaters, economizers, stage heaters, and deposits in turbines which may result from carryover or from volatilization of silica in very high-pressure steam. Organic matter and alkalinity are mainly responsible for foaming and carryover difficulties. Carbon dioxide resulting from the decomposition of carbonate and bicarbonate at higher temperatures is responsible for return-line corrosion. Oxygen is the main cause of corrosion within the boiler and distribution lines.

FEEDWATER REQUIREMENTS. In very general terms, boilers for operation at moderate pressures (below 250 psig.) require a feedwater which is:

1. Clear
2. Free from hardness (not more than 25 ppm. total hardness)
3. Practically free from oil (not more than 1.0 ppm)
4. Practically free from oxygen (not more than 0.03 ml. dissolved oxygen per liter)
5. Alkaline (pH 9.5 or more)
6. Low in silica content (SiO_2 as low as 80 ppm. in concentrated boiler salines in turbine plants).

For pressures higher than 250 psig., the feedwater quality requirements become more restrictive with increasing pressure. The general characteristics of feedwater for higher-pressure boilers and turbines are:

1. Clear
2. Total hardness below 1 to 2 ppm. as $CaCO_3$
3. Oil below 0.1 ppm.

(*Continued on page 302*)

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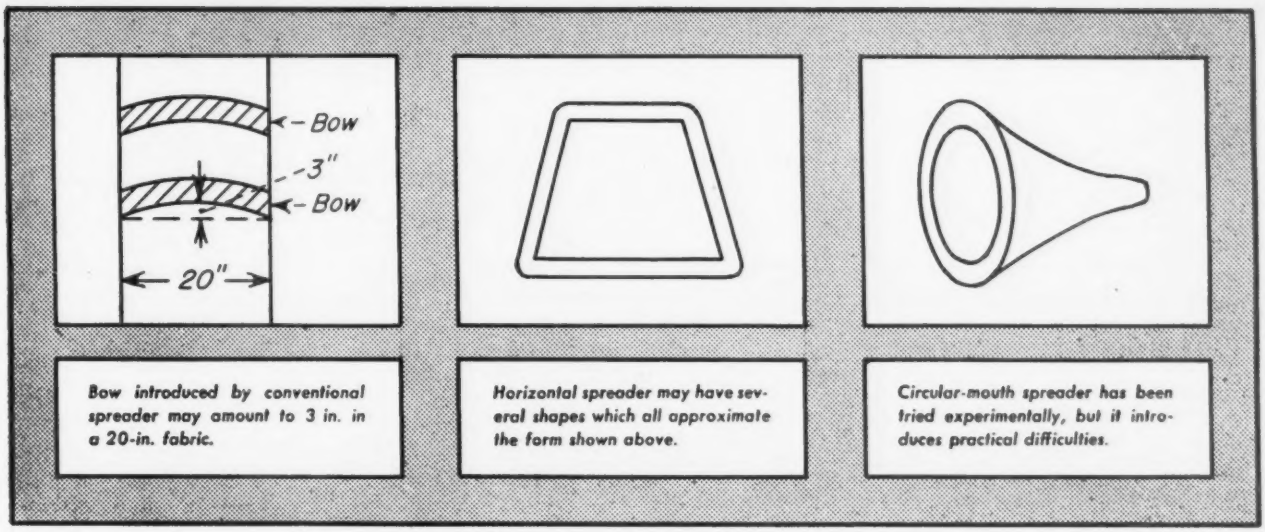

Bow introduced by conventional spreader may amount to 3 in. in a 20-in. fabric.

Horizontal spreader may have several shapes which all approximate the form shown above.

Circular-mouth spreader has been tried experimentally, but it introduces practical difficulties.

Precision Finishing Needed For STRIPED KNIT GOODS

HIGHLIGHTS: *Use of customary spreader puts bow into polo-shirt goods —Several methods available for avoiding or correcting this defect—Marked spirals corrected by slitting and resewing—Even flat tricot is sewed up for finishing in tubular form.*

By IRVING TEPLITZ, *Richard Finishing Co., Jermyn, Pa.*

CIRCULAR KNIT GOODS in tubular form are not finished on a tenter frame. The machine used is the finishing calender which resembles an examining machine on which the goods are rolled up after they are steamed. Fixing the width of the cloth is done by means of a spreader which is a horizontal one-plane piece of light pipe shaped like an isosceles trapezoid. The tubular goods pass over the spreader, are steamed and then rolled on a paper tube. The spreader is placed against two larger, closely spaced, and parallel guard pipes which permit the goods to pass through but hold back the spreader in its position. The flow of the goods keeps the spreader in place against the guard pipes. The width of the spreader determines the width of the cloth; the steaming process plus finishing chemicals with which the goods were previously treated set the cloth to calculated width. Spreaders are either fixed in width or adjustable, are made of polished brass or stainless steel, are relatively light in weight, and about 2 ft. in length.

SPREADER GIVES BOW. As the elasticity of the knit fabric makes it cling to the edges of the spreader, there is an amount of friction present at the edges which is absent in the middle of the spreader. As the spreader is a horizontal affair, the presence of friction at the edges and lack of friction in the center of the cloth cause a perceptible bow which may equal 3 in. in a cloth 20 in. wide. The bow goes in toward the finishing roll as the center of the cloth tends to travel slightly faster than the edges.

If the circular knit goods are given a second run on the finishing calender in a direction opposite to that of the initial run, the bow will be removed by the second compensatory run. However, even the two-run calendering of jersey does not make for a perfect horizontal stripe. The more perfect the horizontal polo-shirt stripes are, the easier it is to cut and sew the shirt itself.

As the horizontal spreader causes bowing of the stripe in knit goods, the development of a non-horizontal method of finishing was naturally explored. A machine has been made to handle knit goods finishing by drawing the goods vertically over a long pipe, usually from one floor to the upper floor, with the cloth being fed from the lower floor and rolled on a paper tube on the upper floor. This machine is not always a convenient installation, and processing on it is slow and not too accurate. On the horizontal-type calender, experiments have been made with a circular-mouth spreader; however, this method is not generally used, probably because of practical difficulties.

There are several types of knit-goods-finishing calenders, each with its particular advantages. One type carries the goods on a revolving blanket which in turn rolls them up on a paper tube; this is a fast machine. Another type calender has vertical rollers and rolls the cloth vertically; this machine is slow, but makes a neatly rolled package. Heated rollers are ideal for rayon and wool cloths. It is sometimes troublesome to thread cloth through vertical rollers, and one machine of this class is provided with a special threading device. Calenders are made in various widths. One common method of finishing tricot fabrics is to sew the selvages together and process them as if they were tubular. The finished goods may be split down both sides on a 70-in. calender by inserting a razor blade in each side of the spreader.

(*Continued on page 291*)

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A number of French companies, following the example of other leading European rayon producers have acquired rights to Industrial Rayon Corporation's Continuous Process.

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How Proper Use of Preparations Can Help Solve Printing Problems—

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Prevent scumming of dyed grounds by discharge print pastes.

GUM PREPARATIONS—

Produce stiffening effect—prevent creasing and marking-off.

Aid penetration in printing Bembergs.*

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Help printing impression on cuprammonium yarns.

Improve depth and levelness of vat-color prints on spun rayon.

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Produce brighter colors, better impressions on cottons.

Keep outlines sharp in printing cotton cords. Give extra penetration or "push through."

TANNIC-ACID PREPARATIONS—

Aid discharging direct or substantive dye by forming lakes.

NAPHTHOL PREPARATIONS—

Produce prints with stabilized azoic dyes.

Proper Preparation Prevents PRINTING PROBLEMS

HIGHLIGHTS: *Knowledge and use of various types of preparations can solve many problems—Oils improve cord printing—Stiffening effect of gums prevents creasing and marking-off—Soap preparation aids vat-color printing of spun rayons.*

By T. N. PATRICK

SIX TYPES of preparations are available for impregnating fabrics for printing—oil, tannic acid, naphthol, resist-salt, gum, and soap. Careful use of the preparation may help the printer solve many difficult printing problems.

Oil preparations have three purposes: fixation of dyestuff, softening, and wetting-out for penetration of the prints. Oils used are various members of the sulphonated fatty oils, for instance, sulphonated castor and olive oils as Monopol brilliant oil and turkey-red oil.

In preparing cloth for printing, sulphonated-oil solutions are used up to a concentration of 5% fatty acid. Such a "prepare" is used when printing alizarine reds and pinks for cheap styles to insure brightness of the colorings.

Some plants still carry out such a preparation of goods partly for brightening and partly for softening purposes. With some chrome mordant dyestuffs, the use of turkey-red oil gives brighter colors—particularly with blues. However, in other instances chrome colors are duller and looser to washing when an oil prepare is used.

A fairly common use is in softening cotton or linen piece-goods to get a better impression. When goods are bleached for printing, the surface of the cloth is sometimes made harsh. Treating such cloth with a weak solution of turkey-red oil during tentering for printing will produce a decided improvement in the quality of the impressions obtained. A 20/1 to 40/1 ratio of water to 50% oil will usually work in such cases.

Softening treatments will not always solve problems of badly desized goods. Much depends upon the dyestuffs used. Any class of dyestuff will give a poor result on badly desized cloth, but some, as the vat dyes, may give improved printing impressions where a softening treatment is used. But steer clear of using oil when alizarine colors are to be used. On cloth containing residual starch, the resulting brightness and color fastness will be worse than if no oil had been used.

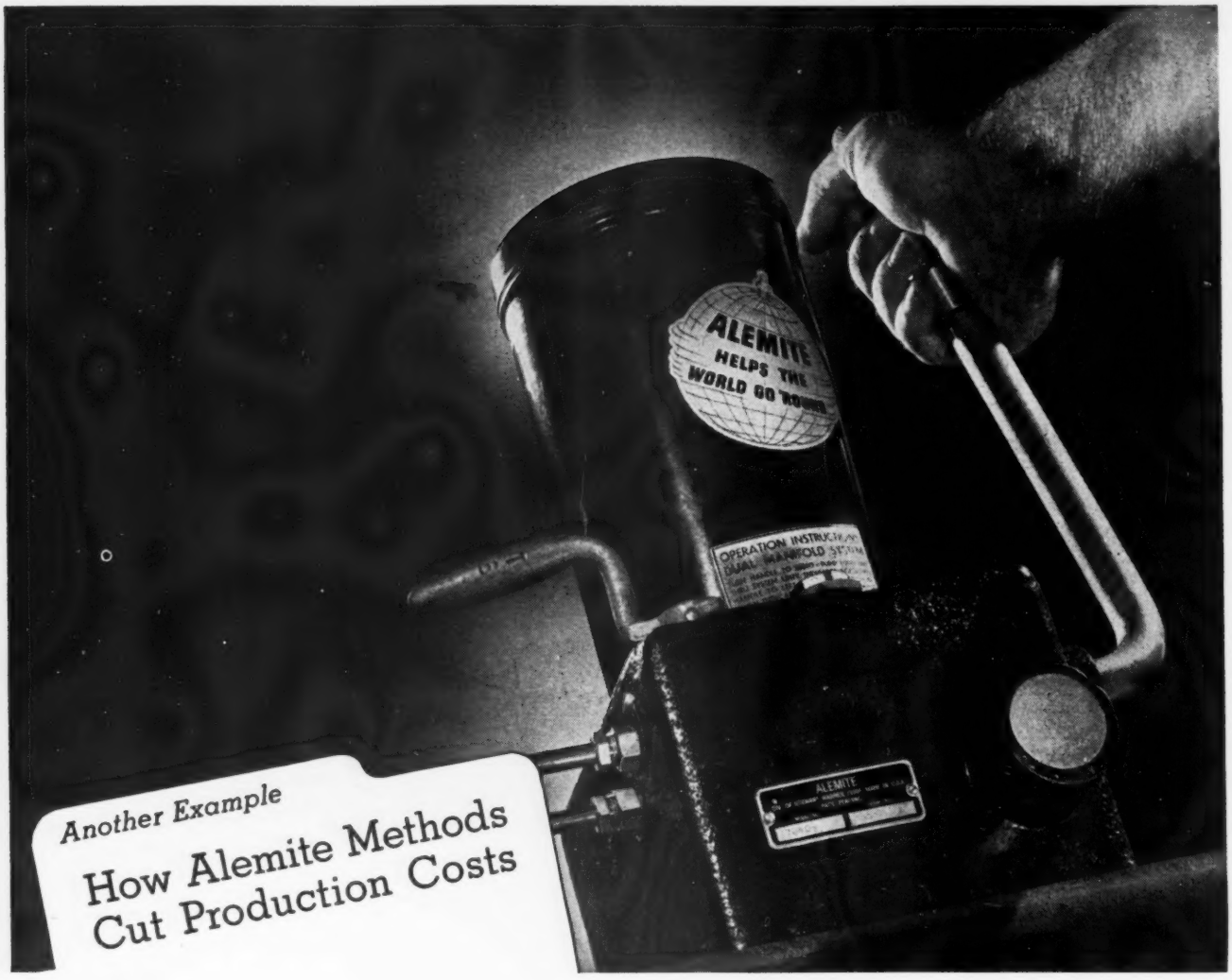
Fine cotton cord cloths—used largely for prints in vat colors—are apt to be hard and the printing impression poor and measly. This trouble is especially noticeable in patterns where outlines are prominent. Outlines tend to become broken, and the general effect is blurred and indistinct. When blurring occurs, a preliminary oil prepare will improve results. If an extra process is objected to, the addition of even a little oil to the final rinse before drying for printing will give improved results. As most of these goods are printed from the drying cylinder without pre-tentering, such an arrangement will need to provide for an efficient squeezing apparatus to conserve the impregnating liquor as much as possible.

Wetting-out is a further function of oils in print preparation. For styles as handkerchiefs and neck-wear, good penetration or "push-through" is an essential in printing. Much depends upon the weight and absorbency of cloth, depth of engraving, etc. But the extra penetration obtained from preliminary oil-preparation of the goods will turn a mediocre job into a first-class print. Very highly sulphonated oils having the best wetting-out properties are used. Goods may be prepared during tentering.

TANNIC ACID. For printing, a tannic-acid preparation is used mainly in the so-called basic-hydrosulphite-discharge style. This is a style produced by basic dyestuffs resistant to the usual reducing agents capable of discharging direct or substantive dyes—such as

(*Continued on page 282*)

* Bemberg is the trade-mark name of American Bemberg Corp. for its cuprammonium-rayon yarns.



Another Example

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TEXTILE Equipment NEWS

Dye-Tub Heat Exchanger Saves Coal, Improves Quality

A heat exchanger for supplying heat to dye tubs has been developed by Douglas M. McBean, Inc., consulting engineer, Rochester, N. Y. This heat exchanger eliminates direct steam injection to the dye solution preventing contamination from boiler water being carried over and preventing dilution by condensate. These heat exchangers are available to the trade through the DeWolf Corp., 315 Alexander St., Rochester, N. Y. The exchangers were designed to produce extremely high circulation of the dye bath and at the same time provide extremely fast uniform temperature rise throughout the dye tub. A commercial installation has been made and has operated for sufficient time so that all pertinent data required for future designs have been accumulated.

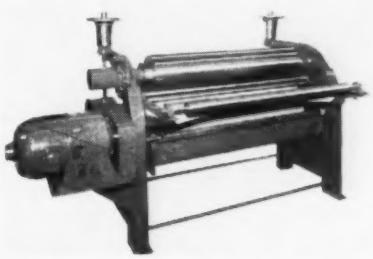
It is claimed by the company in whose plant the commercial installation is operating that appreciable reduction in steam consumption has been proven by the elimination of approximately 12 to 15% liquor dilution by condensate which, in addition to being detrimental to dye bath, is not required for the dyeing operation as the required quantity of water is present before dilution occurs. This hot condensate can be returned to the boilers. It has been proved that by direct-injection methods an appreciable percentage of the steam, particularly when the boiling temperature is approached, escapes from the surface of the tub as steam not condensed.

The exchanger is cylindrical in shape with a unique internal design permitting installation in conventional tubs between the baffle and the end of the tub. The connections for steam-supply condensate return and air vent on the exchanger are arranged for top connection so that no holes or other openings are required in the tubs. Automatic temperature controls are arranged for in the use of this exchanger.

The number of exchangers required in a tub depends on the size of the tub and the rate of temperature rise required. The steam operating temperature is very effective between 8 and 10 lb. gage. The advantages claimed for the exchanger are as follows:

1. Reduction in coal required approximating 12%.
2. Elimination of the dilution of the dye bath.
3. Elimination of possible change of pH in dye bath due to boiler-water contamination.
4. Appreciable reduction in time of matching delicate shades due to elimination of dilution and contamination.
5. More uniform temperature throughout tub due to rapid circulation produced by exchanger.
6. Elimination of noise and vibration which in many cases split the seams in stainless-steel tubs.
7. Reduction in vapor escaping from surface of tub, thereby reducing somewhat room steam-removal problem.

Micro-set Padder Has Steel Frame



Stainless steel is used freely in this new Micro-set 2-roll padder.

A new 2-roll micro-set padder with a specially designed box-type frame of fabricated steel has been announced by Cook-P&N Machine Co., Inc., 365 Dorchester Ave., Boston 27, Mass.

The top roll is stainless-steel covered and bottom roll is rubber-covered. Both rolls revolve in self-aligning roller bearings, and shaft extensions are protected with covers.

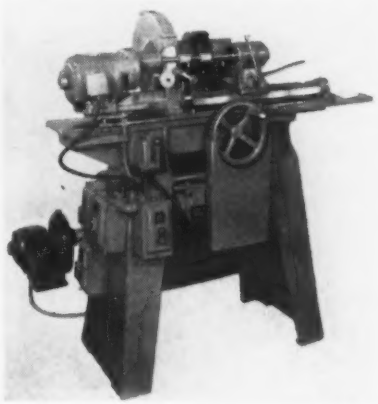
The entering side of rolls is equipped with a protective finger guard for safer operation.

The stainless-steel tank is arranged so that the delivery side can be swung down for easier cleaning. Entering end has rubber expander and stainless-steel guide rolls arranged so that fabric can be immersed or slop treated.

The drive consists of a motor mounted on a steel base attached to the rugged frame and elevated to prevent splash drainage. The chain drive to the bottom roll is guarded.

All parts except motor and ball-bearing housings are of steel for greater strength and elimination of possibility of casting fractures.

Cot-Buffing Machine Designed for Heavy Duty



Four motors drive the components of this heavy-duty cot buffer.

A new heavy-duty buffing machine which has added grinding power for greater productivity in grinding synthetic-rubber cots has been developed by Armstrong Cork Co., Lancaster, Pa. Results from 2 yr. of field tests indicate that these machines have the rigidity necessary for continuous use and will handle Accotex-covered rolls without loss of efficiency.

The new buffer is a high-production machine designed for constant use in larger mills. It embodies improvements over the original machines built in 1946.

The heavy-duty cot-buffing machine is of four-motor design with motor equipment totaling 2⅞ hp., featuring a 2-hp. grinding-wheel-drive motor and a ¼-hp. spindle-drive motor. An au-

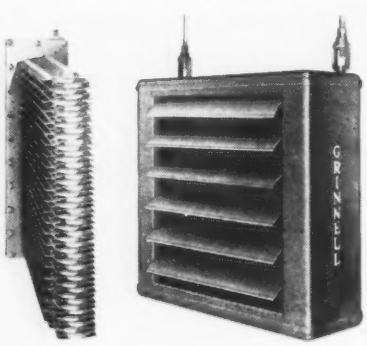
tomatic traverse motion equipped with a ⅛-hp. motor is supplied as standard equipment. This motion has a new type reversing switch which allows the cot to be buffed in two directions without resetting. This back-and-forth buffing operation is said to provide a better finished surface on the cot.

A separate ¼-hp. motor-driven exhaust for the unit takes care of dust exhaust, leaving the full power of the main driving motor for the grinding-wheel operation. The new heavy-duty machine will handle roll sizes up to 18 in. long and 3 in. O.D. With adaptations, the range can be increased to handle rolls up to 7 in. O.D. so that it can be used as an efficient grinding unit for such large-diameter rolls as Bradford worsted spinning and drawing rolls.

This Armstrong-built machine has an overall length of 4 ft., 4 in., a height of 4 ft. 3 in., and a width of 2 ft. 2 in. Its power characteristics are 550-v., 60 cycle, 3 phase. Spindle motor has a ¼ hp. gear head, a motor speed of 1,725 rpm., and a countershaft speed of 365 rpm. The grinding-wheel drive motor develops 2 hp. at 1,725 rpm. The fan-drive motor develops ¼ hp. at 3,450 rpm. The automatic-traversing motor has a ¼-hp. gear head, a motor speed of 1,725 rpm. and a countershaft speed of 27 rpm.

The new machine is available and ready for shipment.

Textile Mill Unit Heater Will Not Clog



Non-clogging heat-transfer surfaces are the major feature of this unit heater for textile mills.

A unit heater specially engineered to meet atmospheric conditions in textile plants has been announced by Grinnell Co., Inc., Providence, R. I.

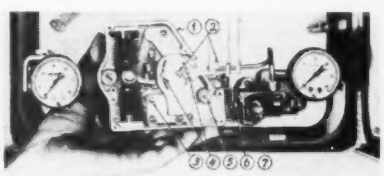
The conventional finned surfaces used in unit heaters that are subject to rapid clogging have been eliminated. In the design of the textile Thermolier, fins are replaced with heat-transfer surfaces of an entirely new design having smooth contours. Removing lint, fly, and dust from this new unit heater is said to require only a jet of air from a compressed-air hose or from a portable electric hand blower, and to take but a few minutes.

A high volume of air delivery provides a partial self-cleaning action which will maintain the heater's capacity for long operating periods. Complete clogging is reported almost impossible with the new construction.

The new Grinnell textile Thermolier is offered in one size with a heating rate of 113,700 Btu. per hr. using steam at 2-lb. pressure and entering air at 60° F. With steam at 25-lb. pressure, this same unit delivers 143,400 Btu. per hr. Any steam pressure up to 125 lb. can be used with corresponding increases in the heat-transfer capacity. The textile Thermolier incorporates the regular Grinnell Thermolier features including U-tube construction and the patented cooling leg.

The textile Thermolier eliminates the need for costly construction and expensive maintenance required in systems which filter all incoming air to the heater. It is said to provide ample heating capacity for the usual textile conditions and reduces cleaning maintenance costs to new low levels. Delivery is assured for the start of the 1948-49 heating season.

Flow-Control Instruments Have New Controls



Features of the new pneumatic control mechanism are reported as: (1) Single-piece die-cast housing, (2) Concentric input and index action maintains fixed relationship throughout entire range, (3) Control point is not disturbed when valve action is reversed, (4) Control assembly easily removed without shutting down system, (5) Reset speed adjustment calibrated 0.2 to 50 min., (6) Automatic-service-manual transfer valve, (7) 0 to 200% throttling range adjustment.

A new pneumatic control mechanism is now incorporated into all flow-controlling instruments made by Fischer & Porter Co., Hatboro, Pa., the company recently announced. The housing for this new unit consists of a one-piece die casting. All component parts are maintained in a positively fixed relationship to each other.

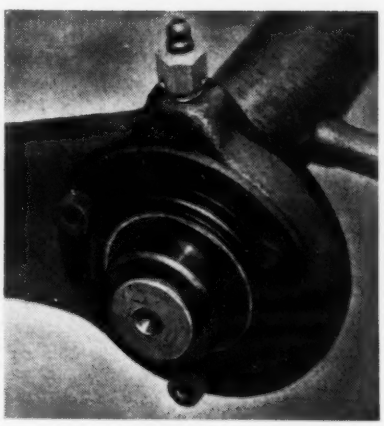
All important working parts are said to be made from precision castings or heavy stampings, are precision trimmed, and carefully inspected to assure complete interchangeability.

The entire assembly may be removed from the control instrument for cleaning or repair without disturbing the process by flicking the transfer valve to the "service" position, disconnecting a single air line, and removing four screws.

A minimum of tubing connections are designed to eliminate air-leakage troubles. Alignment of pen and index is certain throughout the range since both index and input links swing on a common center. Valve action is easily reversible without altering link relationships. The pen faithfully tracks the set point throughout the 0 to 200% throttling-range adjustment.

Reset is calibrated accurately from 0.2 to 50 min. guaranteeing "on the beam" results the moment the controller goes on stream.

Off-End Stand Is Ball-Bearing Mounted



A new ball-bearing off-end stand for card-doffer combs has been developed by Southern States Equipment Corp., Hampton, Ga. The unit is adaptable to all makes of cotton cards. The completely sealed ball-bearing unit is said to eliminate oil damage at the front of the card. Minor misalignments of the comb stock will also be corrected. The stand is available for right- or left-hand mounting.

Tape Tension Pulley Has Aluminum Shell and Shields

A new type of anti-friction tape tension pulley for spinning of cotton and

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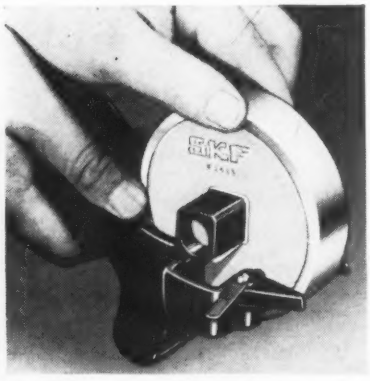
TEXTILE *Equipment* NEWS

(Continued)



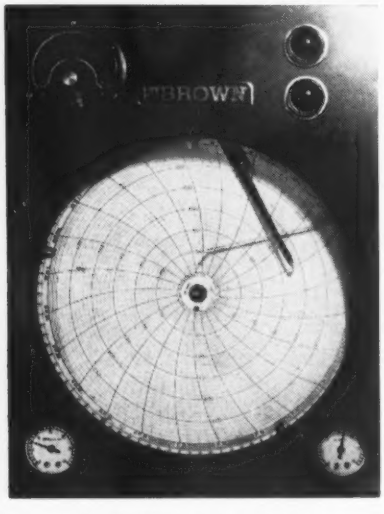
A new tape tension pulley can be mounted on existing spinning frames without bracket alteration.

worsted yarns has been announced by SKF Industries, Inc., Philadelphia, Pa.

The pulley can be mounted on all types of spinning frames without the need for special brackets. Aluminum is used in the 4-in. shell and shields. The pulley is mounted on a ball bearing having a stationary shaft and is supported by plastic blocks which fit spinning brackets now in use.

Volume deliveries are expected to be made soon.

Time-Temperature Control Provided Automatically



Automatic starting, deferred timing, and continuous signalling are offered by this new controller.

A new time-temperature controller which provides temperature control with automatic starting, deferred timing, and continuous signalling has been developed by Brown Instrument Co., Philadelphia, 44, Pa. Once the temperature set point is adjusted and the thermometer switch is turned on, the green signal light indicates that the process is ready to begin. Control is initiated by turning the timer pointer to the desired process duration. Immediately, the green signal light goes out and heat is applied to the equipment.

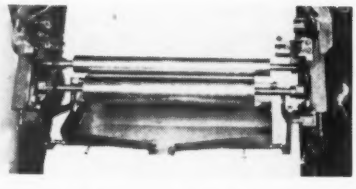
When the temperature reaches the set point, the red signal light is illuminated, and timing is started. Timing continues even if the temperature should fall below the set point until the end of the timed period when the red signal light is extinguished. The electrical signal from the timer can be used to actuate an audible alarm, close down the process, or both.

There is an adjustable limit stop on the timer which can be used to insure duplication of the time-temperature relationship on successive runs.

The time-temperature controller is based upon the Brown thermometer. It is available with vapor, gas, or mercury actuation.

The temperature range may be selected from the large number of standard charts and timer scales of 1, 3, and 12 hr. may be chosen. It may be had with either electric or pneumatic on-off control, or with pneumatic throttle control action.

Color Pan Cleaned Without Removing



A new stainless-steel pan can be drained and cleaned without removing from printing machines.

A new stainless-steel color pan for printing machines which can be tilted for draining and cleaning without removing it or interfering with the color roll has been developed by John Waldron Corp., New Brunswick, N. J. The new pan is of sturdy construction and can be quickly installed on the same brackets that hold the wooden pan. The complete assembly includes stainless-steel color pan, supporting arm, and color roll with larger journals.

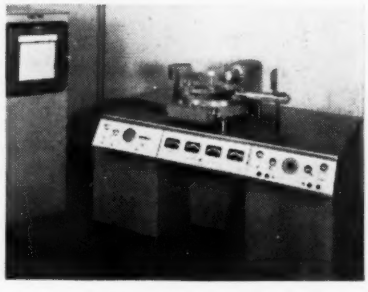
Spindle Oil Cuts Bolster Wear

Improved spindle lubricants said to cut bolster wear as much as two-thirds have been announced by the Sinclair Refining Co., 630 Fifth Ave., New York 20, N. Y.

Service-tested in spindles on spinning frames in regular production operation, the new oils, which bear the names of Lily White Oils AX, BX, and CX have proved superior to uncompounded mineral oils, the manufacturer states. Among improved qualities are oiliness value and stability in usage.

Performance results are said to disclose reduced friction and wear, with less residue accumulation in spindle bases, contributing to extended spindle and bolster life. Maintenance and power costs are also reported lower.

X-Ray Diffraction Unit Opens New Fields



Multiple uses and attractive design are features of this new X-ray diffraction machine.

A new, high-precision, high-output X-ray diffraction machine with many attachments has been announced by General Electric X-Ray Corp., Milwaukee, Wis.

One attachment, the fluorescent analyzer, greatly extends the range of composition of materials which can be analyzed in comparison with that possible when using optical spectrometers.

Another group of attachments makes possible the direct recording of X-ray intensities on a continuous strip of chart paper and saves hours of laboratory time by revealing both the angular placement of the characteristic lines of materials and their relative intensities. This eliminates lengthy calculations and use of a photometer to plot the relative densities of the lines.

The new unit couples, for the first time, precision control of X-ray output with high X-ray intensity. The tube can be operated at milliamperages up to 30. X-ray intensity of the unit is controllable and reproducible to an over-all accuracy of 0.5%. Both the resolution of spectral lines and the speed of analysis are greatly increased. As a result of the precision mechanical construction, the spectrogeniometer reads angles directly down to 0.01°.

The new instrument may be used, with different attachments, for three different purposes:

Direct measurement of X-ray diffraction intensities through the use

Spunjel
FOR WARP SIZING SPUN RAYON

Photo courtesy of:
A. D. JULLIARD & CO., INC.

for solid blending

SPUNJEL maintains the original fiber blend balance in the yarn. Its high adhesiveness and strong, flexible film securely anchors all surface fibers—and effectively reduces shedding on the slashers and looms. It assures a woven fabric that closely approximates the pleasing appearance and hand of expensive worsteds.

SPUNJEL is a specially prepared warp sizing for spun rayon blends containing cotton, wool, acetate and other natural and synthetic fibers. Its high adhesiveness produces results similar to gelatin and makes it particularly suitable for single or plied yarns of acetate or protein fibers.

SPUNJEL—which is readily desized by all standard procedures—permits the woven fabric to fluff out better because it has been woven tightly without loss of bulk through shedding.

National also produces: **NALEX** for cotton and worsted warp sizing; **AMBERTEX** a heavy-bodied thickener for white discharge, direct and vat color printing; **FIBERTEX** for textile finishing; **FLOTEX** to replace natural gums for printing; **FLOJEL** uniform, thin boiling corn starches in all standard fluidities; **HOOSIER** Pearl Cornstarch.

Offices: 270 Madison Avenue, New York 16; Boston, Philadelphia, Atlanta, New Orleans, Indianapolis, Chicago, San Francisco and other principal cities. In Canada: Meredith, Simmons & Co., Ltd., Toronto and Montreal. In Holland: Nationale Zetmeelindustrie, N. V., Veendam.

National
STARCH PRODUCTS

STARCHES—AND SPECIALTIES WITH EASILY DEMONSTRATED SUPERIORITY

of a Geiger-Mueller counter in combination with a rate meter, scaler, and chart recorder.

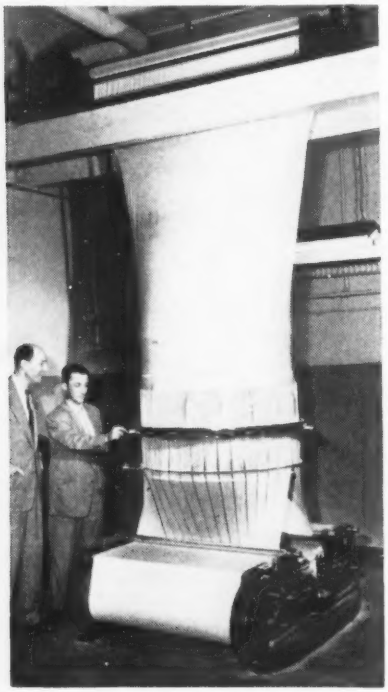
As a fluorescent X-ray spectrometer, employing a focusing crystal analyzer.

With X-ray sensitive film, as a conventional X-ray diffraction unit.

All apparatus except the chart recorder is incorporated into an attractive desk-type console, with the top free from obstructions around and under the tube.

Circular Loom Displayed in U. S.

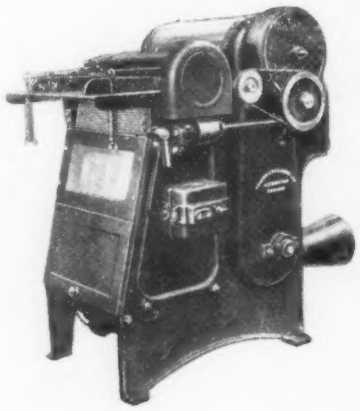
***Louis-Victor Ancet** demonstrates filling carrier which moves through the shed just above serpentine harnesses. Associate Marius Fayolle is in background.*



***The circular loom** is said to produce fabric at rate of 15 sq. yd. per hr.*

The circular loom developed in France (TW, June '48, p. 103 and July '48, p. 112) is being displayed at the plant of Hafner Associates, Long Island City, N. Y. Inquiries may be addressed to Lawrence Berenson, 165 Broadway, New York 6, N. Y.

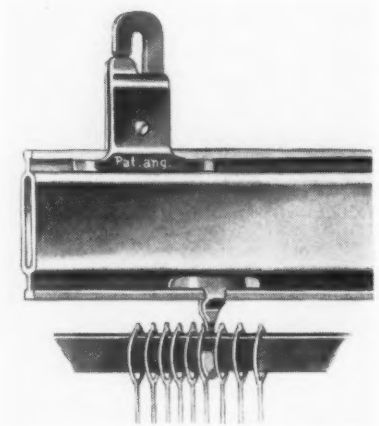
Shirley Analyzer Now in Production



***Amount of waste** in raw and in process cotton can be found quickly and accurately by the Shirley analyzer.*

The Shirley analyzer, a machine for removing trash from cotton by air flotation, is now available from Howard & Bullough, Ltd., Globe Works, Accrington, Lancashire, England. The analyzer (TW, Nov. '45, p. 127) was developed by the British Cotton Industry Research Association at the Shirley Institute. It analyzes on a laboratory scale the amount of lint in raw cotton or waste samples by effecting a practically complete separation of lint and impurities.

Swiss Metal Harnesses Offered in U. S.



***Light metal** is used in new heddle frame and heddles. Sides are of compressed wood.*

Light-metal heddle frames and heddles developed by the Swiss firm of Grob & Co., Ltd., are being marketed in the U. S. by Watson & Desmond, P. O. Box 1954, Charlotte, N. C. The frames have hollow-drawn Anticorodal light-metal top and bottom shafts which will not warp or bow. The sides of the frames are made of a hard, compressed wood, Lignostone, which is not subject to moisture. The frames rub up and down on these hardwood sides so there is no chance of any metal dust coming from friction. Continuous-sliding devices on the frames hold the heddle bar so that the heddles "dance" in place and find their own position. Top and bottom shafts of the Grob frames have a sliding tempered hook or eye which can be placed anywhere on the frame for holding the straps. Thus, there is no necessity for boring additional holes to put in screw eyes and hooks when they become bent or come out of the frames. Dirt and dust will not accumulate on the metal frames, the manufacturer states.

The very thin Grob heddles have an extra smooth eyelet for the warp thread and are precision made.

Adhesive-Coated Tapes Have Many Textile Uses

Four new "Scotch" brand tapes designed to meet the requirements of the textile industry were recently announced by the Minnesota Mining & Mfg. Co., St. Paul, Minn.

All four tapes have pressure-sensitive adhesive, enabling them to grip tightly immediately upon contact, the producer states.

"Scotch" textile tapes 280 and 925 are for holding the ends of warp threads during warping and slashing and for tricot knitting. They can also be used for sealing holes in repairing and modifying jacquard pattern cards.

Tape 916 is for sealing outer wrappings on warps to protect against damage in shipment and also for holding the final lap of a roll of cloth to prevent unwinding during subsequent handling.

No. 400 double-coated textile tape is designed for holding yarn ends, for fastening fur or felt in shuttles, and for starting the wind of cloth on "Simpson" shells. No. 400 has pressure-sensitive adhesive on both sides.

Also offered were standard colored cellulose tapes for identifying roving or sliver cans. Both the special textile tapes and the standard tapes are immediately available.

Solvent Scourer and Web Crusher Developed

A new solvent-scouring process for degreasing and depainting raw wool, and new web crusher, are being developed by M. T. Hoffman, consulting engineer, 187 High St., Newburyport, Mass.

Wool is cleaned by trichlorethylene as it passes through a series of rollers

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"Kaumagraph Reports to Industry"
Please mention
Textile World

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The message-bearing charioteer with his champing chargers, was geared to the tempo of early Greece. Today, however, getting your message across calls for unmistakable product identification—and the Greeks left a word for it, namely Kaumagraph*—the identification method that reproduces your name, trademark or lettering, quickly, legibly, attractively. Whether your particular product is textile, leather, rubber or synthetic, there is a Kaumagraph marking method to give it clear, individual identification that talks quality convincingly to the customer.

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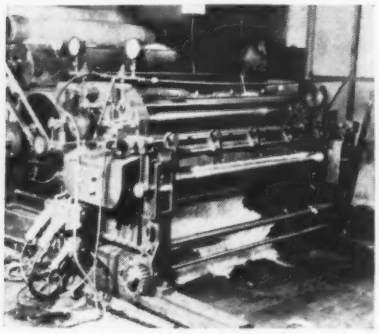
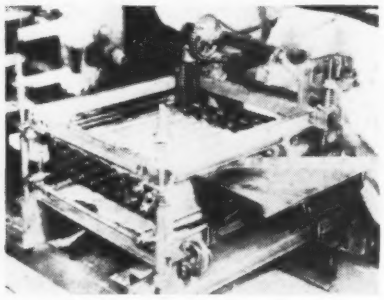


Great crushing pressures for crushing woolen webs is developed by hydraulic pressure.



Wool is scrubbed in solvent by the action of rollers in this pilot unit.

which subject the wool to rubbing action. This rubbing action is said to make more effective use of the solvent and to require less solvent than other methods. In addition, steam and equipment for solvent distillation is reported as reduced. In addition to the regular impurities in wool, paint and tar are said to be removed without extra processes.

A web crusher, also in development, subjects wool to pressure for removal of burrs. Pressure said to be three times greater than that of present machines is exerted on steel rolls by hydraulic means. In addition, rolls are heated by electrical units immersed in oil inside the rolls. The heating elements permit temperature to be set at any point desired, and the rolls deliver the fiber in long, pressed-out form.

Three rolls are used—subjecting the fibers to a crushing action twice, the second time from a different angle. Fiber then undergoes additional mechanical action for disentangling pulverized burrs.

Mr. Hoffman is also working on a process whereby scouring and carbonizing can be done simultaneously. Acid would be forced into crushed burrs by roller pressure, then subjected to the heat of the solvent-recovery process for conversion to carbon.

Automatic Bobbin Winder Developed in England

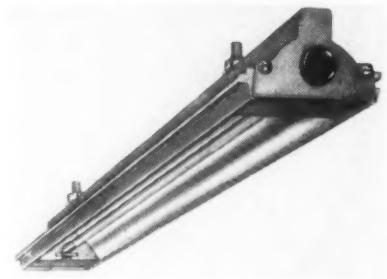
Change of bobbins is made automatically in 5 sec. by this British winder.

A new automatic filling winder is being produced by Harrison Knitting & Textile Machinery Co., Ltd., Manchester, England.

The machine is constructed in units of four winding heads, but each head operates independently of the others. The frame is totally inclosed and any protruding components are conspicuously absent.

All types of tubes and bobbins can be used, the manufacturer claims, the change from one type to another being effected by the simple alteration of the bobbin-supply magazine. Bobbins from 4½ in. to 10 in. in length and up to 2 in. in diameter can be wound at any speed up to 6,000 rpm.

Electric Infrared Heaters Are Made of All Metal



The 4-in. depth of this heater permits its use in tight working areas.

High heat intensity and use of almost the entire infrared band are said to be features of the new Chromalox all-metal electric radiant heaters recently announced by Edwin L. Wiegand Co., Pittsburgh, Pa. These glassless, glareless heaters were designed for drying, preheating, and dehydrating where a longer-wave infrared heat source is desired and where all-metal construction is preferred.

The new radiant heater has a high-temperature inclosed type Chromalox heating element mounted in a rigid extruded aluminum body with an efficient reflector sheet of highly polished Alzaked aluminum which can be easily cleaned or replaced if necessary. Tongue-and-groove sides and two sliding captive bolts ease joining of heater sections into various working patterns.

Heating elements are mounted at the focus of a parabolic reflecting surface. The result is maximum heat radiation uniformly distributed over the surface to be heated. A negligible amount of visible light is produced from the Inconel-sheathed tubular electric heating unit which operates at temperatures of 1,000° to 1,400° F., depending upon wattage of the heating element. The user has a choice of wattage ratings to suit his operating conditions.

Glassless construction permits an unobstructed, unfiltered path of infrared radiation of the longer wave lengths.

The interlocking and sliding belt features permit maximum flexibility in mounting groups of heaters in patterns—arcs, circles, squares, etc. Adjacent sections can be interlocked on a plane or, by means of hinge-acting joints, can be rotated up to 25°.

Assemblies are only 4 in. deep, permitting the heat source to be brought close to the work.

Chromalox radiant heaters can be used to increase work output in existing dryers in ambient temperatures of 400° F. or higher.

Three standard body lengths are 25, 31, and 47 in., with respective heated length of elements 17, 23, and 39 in.; standard height is 4 in.

Mechanized Service Can Cut Payroll Costs

A new payroll service is being offered by Paymasters, Inc., 171 Joralemon St., Brooklyn 2, N. Y. The company specializes in mechanized handling of company payrolls and federal and state payroll tax reports. A detailed plan of payroll handling is worked out to suit the individual client. Payroll work is then done by highly trained personnel on modern accounting machines. The client pays only for the amount of time required for his particular work. Companies using the service can thus take advantage of the speed and accuracy of machine preparation of payrolls over some methods now in use.

Only persons designated by the client have access to payroll or earnings figures. All forms and data relating to payments are prepared and

werner's

NEW HIGH SPEED HEAVY DUTY

Fine Goods EMBOSSING MACHINE

WERNER EQUIPMENT

Beamer • Calenders • Decater • Dry Cans • Embossing Machine • Examining Machine • Flock-Printing-Range • Jig • Open Width Boil-Off • Padder (2 and 3 roll) • Palmer Tenter Quetch Range • Pile Fabric Finishing Range • Quetch • Rubbing Machine • Rope Washers • Stainless Steel Dye Kettle • Single-Color-Roller Print Machine • Tuber • Tenter Frame • Vacuum Extractor

Werner brings you the most advanced engineering in this high speed heavy duty fine goods embossing machine.

Built with a ten inch heated embossing roll in your required width. No bowing or sagging with this roll. Rolls are easily removable too.

A sensitive Hydraulic System gives quick opening and closing of the nip with pressures up to 20 tons.

ANOTHER FEATURE — two chromium plated scrimp rolls and a live steam box to provide preconditioning to the fabric and remove all creases before the cloth enters the nip.

Speeds of 60 yards a minute have been maintained through shift after shift. Let us talk to you about this money making producer.

WERNER MACHINE COMPANY INC.
Phone: Passaic 3-3110
PASSAIC, NEW JERSEY

delivered to designated persons. In addition, special reports based on payroll figures, as job-order costs, direct and indirect labor cost analyses, cost comparisons, etc. can be prepared by Paymasters, Inc.

Machine Feeds Seals, Tensions, Cuts Strapping

Seals are fed automatically and strap is tensioned, cut, and sealed with minimum motion by this new machine.

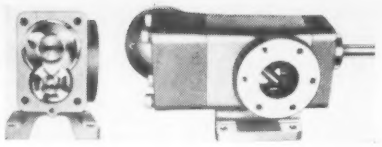
A one-tool strapping machine that tensions, cuts, and seals steel strap with minimum motions and effort has been developed by Signode Steel Strapping Co., Chicago, Ill. Known as the A-2 seal-feed strapping machine, the new tool is durable, sturdily made, and light in weight. It can be handled by inexperienced operators, both men and women.

Seals feed automatically from a magazine. Reloading units are inserted quickly. Stretcher and sealing handles operate smoothly with continuous, positive motions. For use in conveyor-line operations, the A-2 may be easily attached to a tool mount made for the purpose.

Helical Rotor Pumps Feature High Capacity

A new line of positive displacement, extremely simple, helical rotor pumps has been announced by Syntron Co., 825 Lexington, Homer City, Pa.

Two helical rotors, one a driving rotor and the other an idler rotor, force the liquid ahead in an axial flow in volume and at pressure. The shaft of the driving rotor is mechanically sealed against leakage by a Syntron antifriction shaft seal.



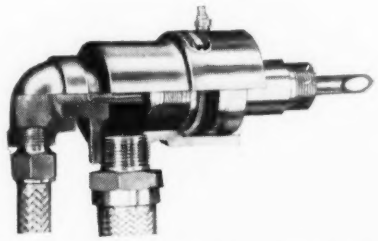
Meshing of helical rotors moves fluids axially through this new pump.

Built in two sizes, these pumps are primarily designed for handling various fluids at either 50 or 75 gal. per min., at pressures of up to 125 psi., in a smooth, pulseless flow.

Rotary Union Has Monel-Metal Bellows

A new design rotary union featuring a monel-metal bellows has been developed by Perfecting Service Co., 6140 Cottage Grove Ave., Chicago, Ill. The bellows eliminates the need of spring loading, provides self-adjusting pressure on extra-heavy service, and brings friction drag down to a new low.

The all-purpose ball-bearing rotary union is used for introducing steam or coolants into rotary drums such as used on dryers, calenders, coaters, dry cans, and slashers. The ball-bearing construction permits considerable horsepower saving, and the flexible hose eliminates the need for complicated piping and supports. It is available in plain, "P", and syphon "S" types.



Friction is kept to a minimum by the construction of this new rotary union.

Useful Accessories FOR TEXTILE MILLS

Atomizer for "Fogging"

An atomizer which disseminates a "dry" mist of insect-killing droplets has been announced by West Disinfecting Co., 42-16 West St., Long Island City 1, N. Y. Ten nozzles dispense the insecticide in particle sizes so small that they will not condense out, according to the manufacturer. Six types of units are available. They are operated by air pressure, steam pressure, or carbon dioxide-gas pressure.

Mold and Mildew-Resistant Paint

All major Valdura paint products now come with a mold- and mildew-resistant formulation, according to an announcement by American-Marietta Co., Chicago, Ill. Paint workability and life are said to be unaffected. The paint is recommended for any spots where humidity is high.

Sewage Pump

A small non-clog sewage pump adapted to the pumping of pulps, sewage, and trash has been announced by Economy Pumps, Inc., Hamilton, Ohio. Main shaft and bearings use a two-row heavy-duty ball bearing with matched angular contact thrust bearings.

Monel Sheet Roofing

A new type of monel sheet for roofing purposes has been developed by International Nickel Co., 67 Wall St., New York 5, N. Y. The new sheet is claimed to be softer in temper and more adaptable to roofing than the previous product. It is available in standard roofing thicknesses.

Magnetic Separator

A magnetic separator for the removal of tramp iron from air- and gravity-conveyed materials in process has been announced by Columbia Engineering Service Co., 593 Market St., San Francisco 5, Calif. Units are fabricated from heavy-gage sheet metal and equipped with two angle-type magnetic plates which are hinged for ease in cleaning. Non-electric permanent magnets are used.

Spectrographic Accessories

Development of five new accessories for use in spectrographic analysis has been announced by Bausch & Lomb Optical Co., 635 St. Paul St., Rochester 2, N. Y. The accessories include a densitometer, a spectrum plate projector, a safety arc and spark stand, an electrode shaper, and a briquetting press. All may be used with any spectrograph.

Multi-Outlet Coil

"Snapicoil," a wiring harness which furnishes many electrical outlets in a short length, has been announced by Wiremold Co., Hartford 10, Conn. The harness is available with outlets 3, 12, 24, and 36-in. apart. Cover sections are furnished with each coil for installation between receptacles.

Magnetic Gas Valve

An hermetically-sealed magnetic gas valve which eliminates gummy or foreign matter forming in the solenoid has been

(*Continued on page 310*)

WASHING REFLECTS QUALITY

...when QUADRAFOS* looks into it

You can see, feel and smell the improvement when QUADRAFOS adds more power to your scour. Take Cape, Texas and lime-pulled wools, for example. Scour them with QUADRAFOS added to soap and alkali in the right proportion. Then, they look as if they were bleached . . . feel more open, softer and loftier . . . have little or no odor as compared with soap-and-alkali-scoured wool. Write for the facts that back up this promise of better scouring, together with information about the many other ways QUADRAFOS brightens your wet-processing picture.

softens water without precipitation...deflocculates ...redissolves precipitates...promotes free rinsing

ONLY WITH **QUADRAFOS** CAN WATER DO SO MUCH, SO WELL

*U. S. Reg. Trade-Mark for Sodium Tetraphosphate made by Rumford

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Technical Service Department
11 Newman Avenue
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Please send me further information about the use of QUADRAFOS in textile wet processing. I'm particularly interested in:

- ☐ Raw wool scouring
- ☐ Piece goods scouring
- ☐ Kier boiling
- ☐ Reducing bleach requirements
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Pointers FOR SUPERVISORS

How the Management Team Can Build Better Human Relations

By GLENN GARDINER

SUPERVISORS ARE SALESMEN

Study Men

Glenn Gardiner

Your supervisory job is different today—different from what it was five, ten, fifteen years ago.

The chief difference is that *men have become more important than machines.*

It is no longer enough for a supervisor to have complete job knowledge. Today, *he must know men as well.*

My advice to you is to *study men.* Your job knowledge is not enough to qualify you to do your job well.

Team-Work

Ask him! Don't order him! Ask a man, "Bill, will you do this job for me?" He'll respond much more readily and cooperatively than if you were to order him, "Here, Bill, take care of this job!"

Even though you put an order in the form of a question, a man will understand perfectly that he is to carry out your desires just as surely as if you were to give him a positive order, as a sergeant's command. Besides, he'll appreciate your considerate manner. It will help him to keep his self-respect. It will make it much easier for him to respond cheerfully. Instructions given in the form of a question, or a tactful request, will be met with *willingness* and *interested teamwork.*

Relations

Labor relations is a supervisory job today.

No matter what provision in your organization has been made for handling personnel or labor-relations problems, the supervisor—the man who gives orders and supervises work—is the one who has most to do with keeping the men "sweet." The supervisor is the "cutting edge of the labor-relations tool."

It is recognized today that there is no substitute for good, considerate, and capable supervision. No higher executive or staff executive can make men in the ranks feel happy about their jobs. The man's own boss makes his job pleasant and the department a satisfactory place to work. There is no chance for the supervisor to escape his human-relations responsibilities and opportunities.

Consideration

"What's sauce for the goose, is sauce for the gander." So runs an old saying.

Applied to you and your men, it means that your men like to be handled as considerately as you would like to be handled if your positions were reversed. They want to be handled as considerately as you want the man above you to handle you.

In other words, if it is proper for you to desire considerate supervision from the man above you, it is equally proper for men under you to look to you for the same consideration.

Sometimes the supervisor who has a severe task-master above him, "takes it out" on the man below him. This is a poor way for a supervisor to ease his own feelings.

Even though your boss may be tough, it does not help your situation if you turn around and be that much tougher with the men under you. It makes it only that much harder for you to get good results from your men. Second-rate results will only call down on you sterner treatment from the man above you.

The supervisor's job today calls for a man who can multiply himself through others—a man who can get results by *getting men to work with him.*

Salesmanship

Every supervisor's job is a salesman's job. As a part of management in direct daily contact with men in the ranks, the supervisor has the responsibility for *selling the company, its policies, its plans, its methods,* and *its goals* to his men. Often it requires a higher type of salesmanship to sell ideas than to sell actual products. The supervisor's selling job, therefore, requires some preparation, possession of much information, and an interest in carrying these ideas to his men.

If you will think of yourself as a salesman, you will be much more inclined to *lead* your men than to *drive* them.

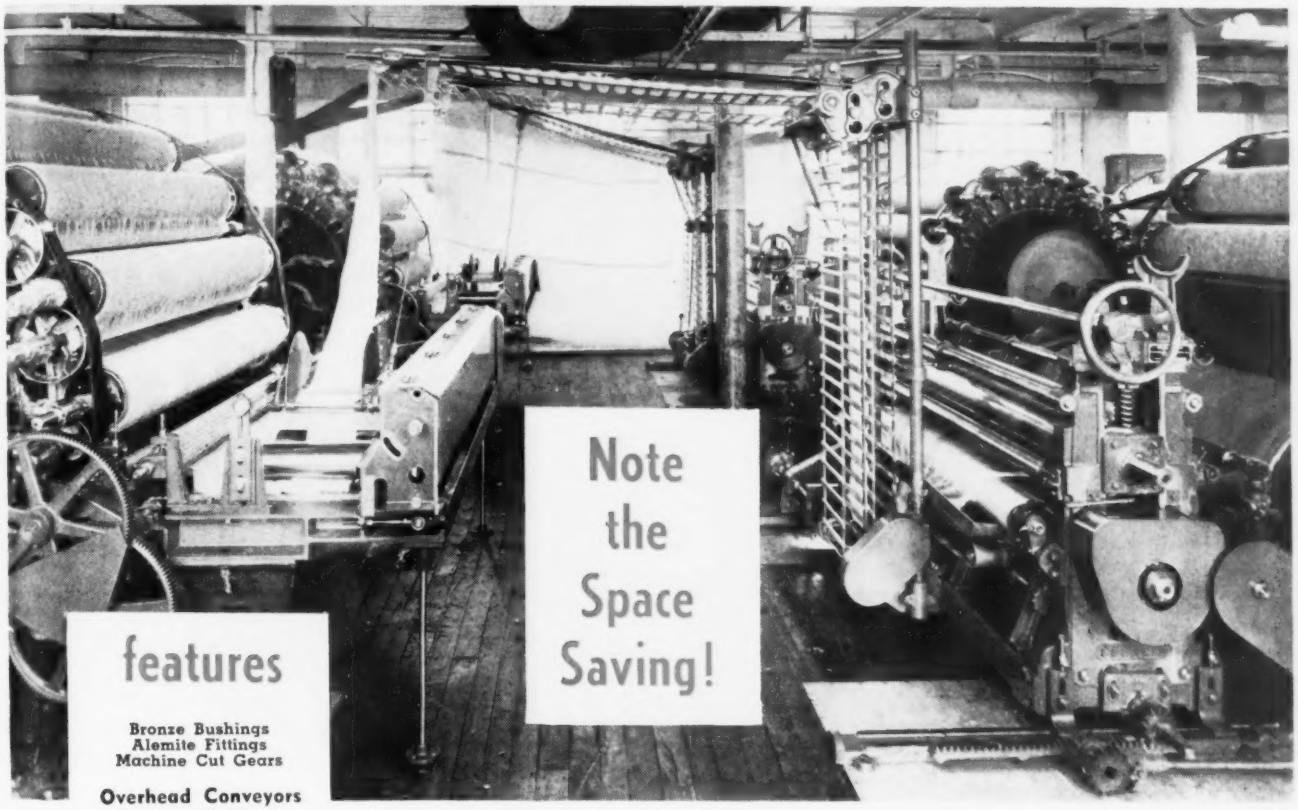
Good salesmen learn all they can about the products they sell. Good supervisors learn all they can about ideas, the policies, the methods, the operations, and the company plans which they must sell to the men under them.

TEXTILE TICKLES . . . . . By Edgar Allen, Jr.

"Looks like those doggone calenders are at it again!"

DUESBERG-BOSSON of AMERICA, INC.

OUR PATENTED PERALTA MACHINE AND NEWLY DESIGNED INTERMEDIATE CENTER BROAD BAND FEED



features

Bronze Bushings
Alemite Fittings
Machine Cut Gears

Overhead Conveyors
Fastened Rigidly to Peralta
Two Vertical Supports Less Vibration
Oilless Wood Bushings
Heavy Roller Chain Drive
Jaw Clutch Aids Starting
Width of Woolen Band Adjustable—2" to 11"

Feed Table
Heavier Design
V-Belt Drive
Variable Speed Sheaves
Deeply Fluted Aluminum Rolls
Prevent Web from Sticking

for:

(a) Removal of Paint, Tar, Vegetable Matter.

(b) More Uniformity of Yarn.

(c) Greater Card Production.

(d) Increased Spinning Production.

(e) Better Weaving.

(f) Enhanced Fabric.

Duesberg-Bosson of America, Inc.

351 Harris Avenue, Providence, R. I.

Round Table

FOR EXCHANGE OF IDEAS—*The Round Table is open to letters from any and all readers discussing subjects relating to mill management, production, engineering, technology, etc. Names of contributors will be held confidential if so requested, but contributions must be signed with real name and address as evidence of good faith and to permit payment for items published. Address contributions to: Editor Round Table,* TEXTILE WORLD, *330 West 42nd St., New York 18, N. Y.*

Knee in Clothing Wire Maintains Height of Point

Knee wire is needed in card clothing to maintain the point of the wire at an almost-invariable height. When a clothing wire comes into contact with a fiber bunch, the wire is bent or turned backward. If the wire is kneeless and set at a slant in the clothing base, its height from the base would be increased as it was bent backward.

The proper shape and function of the wire are as described in the following. The knee of the wire should be in such a location that part of the bending backward is achieved above and below the knee. If the wire were shaped and mounted in the base so that the backward bend would occur below the knee and the wire would lose height. If the wire bent only above the knee, it would gain height. If the bending is properly distributed above and below the knee, the height of the wire remains almost constant. *(R-361 Dimo Pierrakos, Salonica, Greece)*

Reader Is Disturbed

I am much disturbed about a condition that exists in most of our mills.

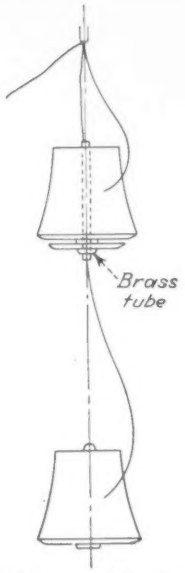
I understand that some plants have cafeterias, or some other means, for providing workers with good meals while they are on the job. Most mills, though, do not have such conveniences.

The majority of workers now are piece workers and have certain production schedules to maintain. The tendency of these workers is to buy sandwiches and drinks off the lunch wagons that operate in most mills. Of course, such food does not comprise a healthful meal. This kind of eating, I think, accounts for much anemia and stomach trouble among workers. Needless to say, the worker's efficiency suffers; so does the mill's profits.

We hear much about employer-employee relations. I believe that here is an excellent place for employers to start improving relations. It would pay for the employer to have a spare hand to keep the job going while a piece worker takes 20 or 30 min. off to eat a good meal. *(R-423)*

[For what one mill has done see story on page 114, T. W., Aug. '48—*Editor*]

Two Knitting Ends Doubled on Machine



Top yarn twists around bottom yarn, which feeds through top cone.

Everybody has a method for doubling yarn when only little twist is desired. A short time ago, I read a kink in TEXTILE WORLD that described such a method for use on a winder.

Well, here's another variation. This one is for doubling yarn on a knitting machine. We used it for running up small lots of yarn. Sometimes—when we didn't want to ply the yarn on a winder—we used this method right on the knitting machine for large lots of yarn.

We put small brass tubes in the iron cone holders on the back of the knitting machine. (The position of one of the brass tubes is shown in the sketch.) We placed the top cone of yarn over this tube and the bottom cone on the floor under the top cone. We threaded the yarn end from the bottom cone through the brass tube and top cone. (A looped wire did the threading.) *(R-428)*

U. S. Inventor Was First With Yarn-Tension Device

Thanks! You explained the difference between my kink and the tension device described by the reader in Holland very well [T.W., June, p. 152]. I trust that my gravity tension is nearer the correct procedure than his positive tension.

Dates do not always determine the originality of an invention, although a later inventor may be suspected of copying. As a matter of record, my tension device was put into use May 10, 1910.

If our patent laws protected an inventor as they are supposed to, it would have been worth while to patent that one. *(R-427)* *Walter A. Simond, Franklin, N. H.*

Goodbye, Mr. Slow

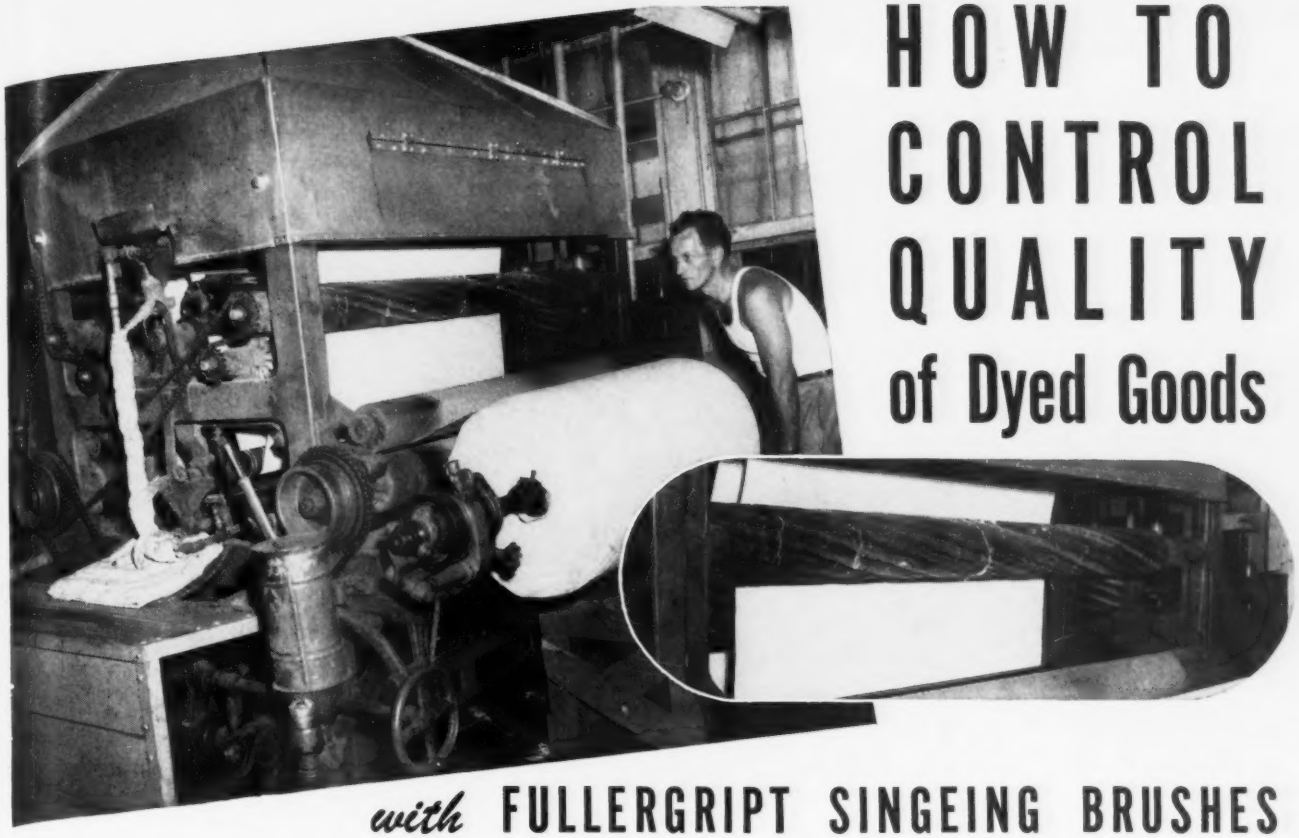
Mill management hesitates—for understandable reasons—to take on the task of improving basic characteristics of workers. Even with a fairly tight labor market, there are limits to what the textile industry can attempt along these lines. However, when the responsibility can be handled by foremen and with only elementary training, mill and worker alike gain.

Slowness of thought and action offer opportunity for improvement. You cannot make all employees alert and swift in all things; it is not necessary. But a foreman with some training and cooperation from management can speed up operations where speed up is needed.

First, eliminate all matters that do not directly affect the worker's position in the mill. What he does with his own time is his personal problem; concentrate only on his duties in the plant. Provided the task is relatively simple, the worker may be taught to speed up his operation by tactful suggestions and the hint that you are showing him how to keep up with the average and slightly-above-average employees.

It will not always be so simple; frequently the job must be analyzed and broken down into many small parts. Then the slow worker should be taught

(*Continued on page 255*)



HOW TO CONTROL QUALITY of Dyed Goods

with FULLERGRIPT SINGEING BRUSHES

Your goods can be dyed evenly, free of streaks and discolorations, thanks to the distributed sweeping action of Fullergript brushes in the singeing machine. With Fullergript the brush material extends from a metal channel as a continuous strip. Consequently, the brushing action all across your fabric is uniform. There is *no* shifting of warp or filling threads. For this reason the subsequent dyeing is likewise uniform.

For many years the Hollywood Piece Dye Works of Passaic, New Jersey, has controlled quality by standardizing on Fullergript singeing machine brushes. With a production of 450,000 yards weekly, on a machine equipped with four brush rolls, this concern finds their Fullergript brushes have an average of 18 months service life. When these brush strips are replaced, the change can be made quickly, without dismantling the machine. But now that this type of Fullergript brush is given a fireproof coating, Hollywood looks forward to even longer life from their singeing brushes.

Because singeing brushes have a direct effect on your profit picture, it would be well for you to investigate Fullergript thoroughly. Simply write to . . .

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INDUSTRIAL DIVISION
THE FULLER BRUSH CO.
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THIS IS NO. 71 OF A SERIES ON

GETTING THE MOST FROM WINDING

Information about winding designed to show improvements in winding equipment and new ideas in the winding operation

CREPE TENSION
No. 90 Winding Machine

This Crepe Tension is used in conjunction with the No. 90 Winding Machine which has long been recognized as the outstanding filling winder for a great variety of yarns. It is designed primarily to wind high twist crepe yarns from an overend supply.

Tension is applied in such a manner that yarn can be wound without running back twist between the tension and the supply. The tension discs receive motion from the yarn, which causes them to revolve in the same direction and at the same speed as the yarn itself.

Tension is obtained through a braking action on the tension wheel and is controlled by the compensator. The braking action is applied to the tension wheel by means of a brake band. This band is attached at one end to the compensator and at the other end to the tension bracket. Adjustments can be made at either end of the band in order to obtain the desired amount of tension. The tension wheel is fixed to the shaft on which the discs are mounted, therefore, any drag that is placed on the wheel will be transmitted to the tension discs. Since tension applied in this manner does not perform a pinch action on the yarn, the possibility of twist displacement when winding is eliminated.

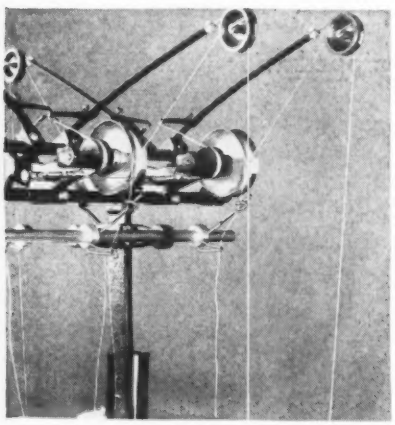


Fig. 1—No. 90 Crepe Tension

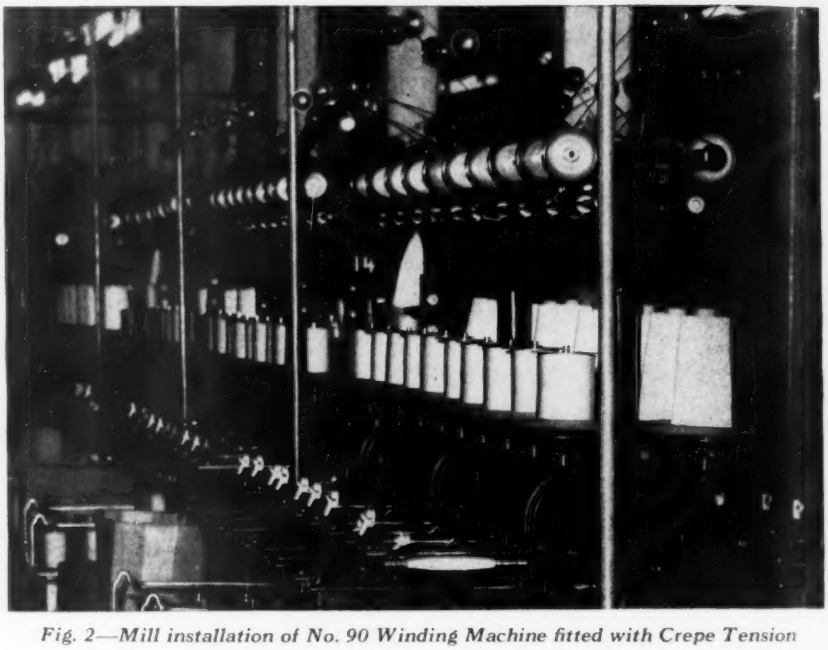


Fig. 2—Mill installation of No. 90 Winding Machine fitted with Crepe Tension

With this overend type of tension, a larger supply package — such as cones, tubes or spools designed for overend delivery—may be used. Also, a higher machine speed can be maintained than would be recommended for a rotating spool supply.

Periodic inspections should be made to see that the tensions and their component parts are correctly positioned and functioning properly:

1. Tension brackets mounted so that the left hand faces of the tension wheels are directly over the winding spindles.

2. Auxiliary guides positioned directly over the supply spindles.

3. Pigtails inclined at 45° angle towards the tensions and slightly to the left of the center of the groove. Setting the pigtails in this manner prevents any abrasive action between the yarn entering and leaving the "V" groove.

Should the brake bands become glazed after continual usage, causing the wheels to slip, tension will be lowered resulting in soft quills. Bands that have become glazed can be reconditioned by soaking them in Carbon Tetrachloride for approximately one hour.

See pages on Universal and Atwood Machinery in TEXTILE CATALOGS AND DAVISON'S

*Reg. U.S. Pat. Off.

September 1948

23-8-2

WINDING AND TWISTING MACHINERY FOR NATURAL AND SYNTHETIC YARNS

UNIVERSAL WINDING COMPANY

PROVIDENCE BOSTON PHILADELPHIA UTICA CHARLOTTE ATLANTA CHICAGO LOS ANGELES MONTREAL and HAMILTON

Kinks AND SHORT-CUTS

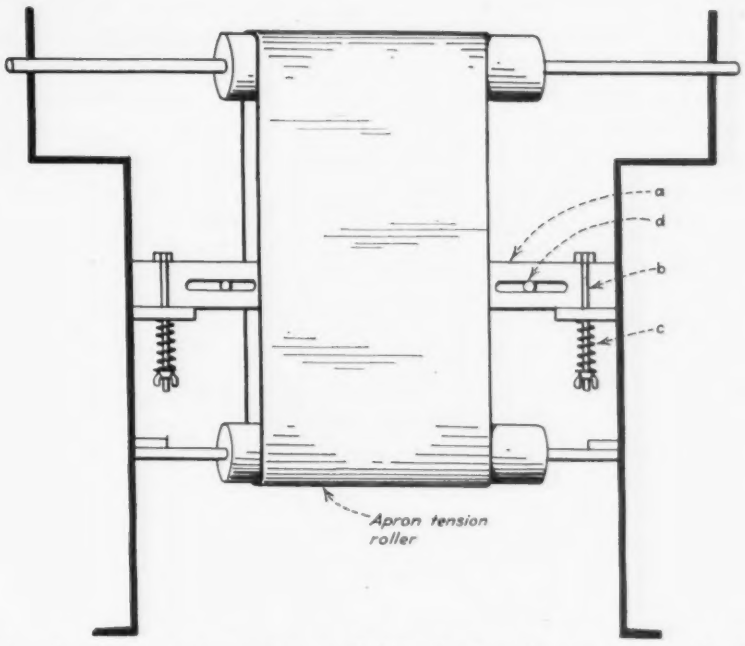
Gill-Box Aprons Held in Place by Guides

***PRIZE WINNER FOR SEPTEMBER**
(June contest)

We are operating balling-head gill boxes that use leather aprons 16 in. wide and 44 in. long. We found it difficult in many cases to keep the apron in its proper running position. Often we had to use a crowbar to push it one way or the other in order to put it back into position. If the apron slides too much to one side, it damages the wool. Many times we had to remove an otherwise perfectly good apron because we could not keep it in position.

The purpose of the kink shown in the accompanying sketch is to prevent the apron from sliding back and forth. Since we adopted this method, we have been able to increase the life of our aprons—which meant a considerable saving to the firm.

A length of angle iron, a in the sketch, extends across the path of the apron. It is located between the drive roll and the tension roll, and is fastened to the sides of the roller frame by means of brackets and bolts *b*.



***Gill-box head aprons** often tend to run off their rolls. Sometimes an apron must be thrown away only because it will not run in its proper position. This expense can be avoided by installing the apron guides shown here.*

Bolts *b* extend well below the brackets so that springs *c* can be placed over the bolts. In case the apron tension roll comes loose and hits angle iron a, springs *c* cushion the blow and prevent breakage.

Slots cut lengthwise in a provide adjustment for guides *d*. Such adjustment makes it possible to run an apron wider than 16 in., if the need should arise. Guides *d* extend outward a few inches from a and serve as guide posts to keep the apron from running too far to one side.

Materials used for making the apron guide were:

Angle iron a: ½-in. angle iron.

Bolts *b*: ⅜-in. bolts through ½-in. holes in a.

Springs *c*: ¾x2 in.

Guides *d*: ⅝-in. rod 7 in. long. *(K-975) Harold McLean, Huntingdon, Quebec.*

A $25 SAVINGS BOND FOR YOUR KINK

*** You undoubtedly know of some kinks and short-cuts that are helpful to mill operation. Write them down and send them in. We pay promptly upon acceptance—*before* publication. In addition, we award *every month* a $25 Savings Bond for the accepted kink we consider most useful.**

Don't delay. Don't worry about dates. Send in your kink *now*. There is always a Savings Bond prize contest going on!

Don't take time to polish up your writing. We'll do that. Don't waste time to make a finished drawing, as our draftsmen will take over. Just write enough details and do enough drawing (if any drawing is necessary) to make clear to the editors how your idea works and what machine or process it is applicable to. Photos can be sent.

Look over the kinks in this and other issues. They will offer you some useful ideas, and they will also suggest other ideas you can send in. We like items that pertain to ways for improving machines, new devices that a mill man can build, attachments that are of merit—anything that will help production, improve quality, or cut costs.

Writing kinks is easy. It's fun. It's profitable. Give it a try. *Now.*

RULES OF CONTEST

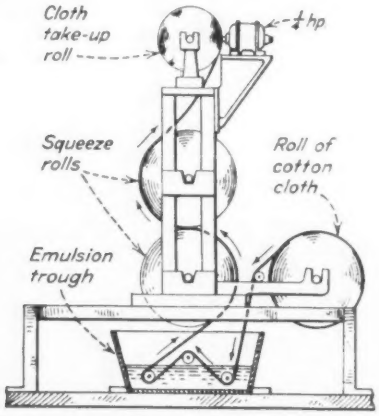
1. No limit to number of entries.
2. New contest every month. Each contest closes with kinks received last day of the month. Prize winner is published the third succeeding month.
3. All kinks will be paid for on acceptance. Illustrations, when submitted, do not need to be finished drawings (penciled sketches are satisfactory); but they should be clear and complete. Prize awarded to winner is sent to him after publication. Good photos are acceptable.
4. Previously published material is not eligible for prize or publication.
5. Unless you advise to the contrary, we assume that we may sign your name to your kink when published.
6. Judges of the contest are editors of TEXTILE WORLD. Their decision is final.
7. Send your entries to either address:

TECHNICAL EDITOR
TEXTILE WORLD
330 W. 42nd St.
N. Y. 18, N. Y.

ASSOCIATE EDITOR
TEXTILE WORLD
P. O. Box 1641
Columbus, Ga.

Kinks AND SHORT-CUTS (Continued)

Simple Cloth Padder Made of Wood and Metal



A simple padder can be made by arranging emulsion tank, squeeze rolls, and take-up roll as shown here.

A simple padder or sponging machine can be made as shown in the accompanying sketch. Such a padder can be used for sizing dress goods, shirting, etc.

The machine consists of a wooden trough and supporting frame, metal supports for the rolls, two squeeze rolls, and a cloth take-up roll. Size is placed in the wooden emulsion trough located beneath the squeeze rolls. The roll of cloth to be sized is placed in the unwinding position as shown. Open bearings at the ends of the metal supporting arms receive the cloth pin.

Cloth is threaded under the first guide roll in the emulsion trough, over the second, and under the third. It is then led between the two squeeze rolls and to the take-up roll at the top of the frame.

Only the take-up roll is positively driven, unless it is desirable to process the cloth with a minimum of tension. Tension can be lessened by positively driving the squeeze rolls. If tension is not objectionable, a ¼-hp. motor mounted at the end of the take-up roll will provide sufficient driving power for the machine. *(K-932) H. J. Haas, Martinsburg, W. Va.*

Tight Drawing Ends May Indicate Trouble

Many wool carders are not able to keep warper beams near enough the standard weight. In some cases, beams run as much as 12 lb. on the heavy side.

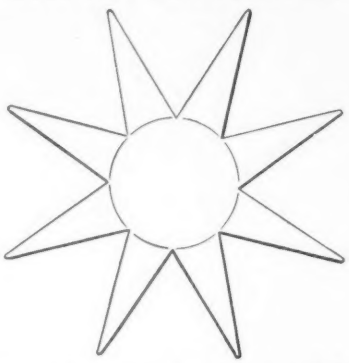
To make up for such heavy warps, filling yarn must be spun much finer than standard. Otherwise, the cloth would be too heavy.

In many cases, the carder's trouble can be traced to the setting of his drawing rolls. It is well known that drawing rolls will not draft properly if they are set too closely together. If 1¼-in. stock is being run on rolls set 1½ in. apart, and the rolls are closed up to 1¼ in., the web between the front roll and calender roll will tighten up at once. The tighter web shows that the rolls are not drafting as much as they should.

Of course, changing humidity conditions will also affect the web. But humidity is fairly well controlled in most mills now.

A carder who is having trouble with his warp weights should make a practice of watching his drawing webs. If the webs tighten up, it usually means that his stock is longer or more wiry than he has been running. *(K-971) William Shaw, Providence, R. I.*

Rubber or Copper Cover Makes Soft-Head Hammer



If you have a need for a soft-head hammer and one is not available, you can make one by covering the head of a regular hammer with a piece of copper or rubber.

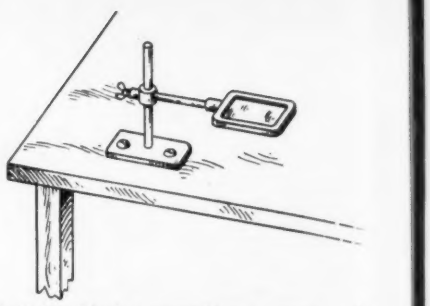
Measure the diameter of the hammer head, and cut a circular piece of sheet copper or rubber about three times as large as the hammer head. Cut the edge of this piece in points, as shown here.

Place the hammer head in the center of the piece, and fold the points up around the hammer. Wire the points firmly to the hammer. **(K-952) W. E. Warner, Essex, England**

Magnifying Glass Aids Blade Inspection

When a smash occurs on a spring-needle knitting machine, all wheels in the damaged area must be removed, inspected, and burnished before production is resumed. These precautions must be taken to prevent cutting or snagging of the yarn by nicks and burrs on the blades.

Since many of the nicks and burrs are very small, inspection is usually done by touch. In spite of careful inspection, defects occasionally are not found; and when the wheels are replaced on the machine, cloth defects

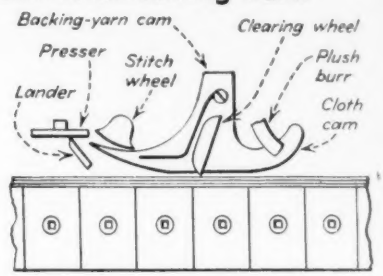


Knitting-blade inspection is more effective when a magnifying glass is used. The glass will show up small burrs that might not be found without it.

result. The cause of the defects is often hard to find because it is assumed that the wheels have been put in good condition. A double inspection is worth while.

A magnifying glass attached to the bench at which the wheels are inspected and rebladed is an aid to inspection. Most knitting rooms have a few magnifiers for use in cloth inspection. One of these converted to bench use is satisfactory. *(K-943)*

Homemade Wire Cam Controls Backing Yarn



Backing yarn, on a stitch-wheel spring-needle knitting machine, can be controlled by a homemade wire cam. The cam gives positive control of the yarn between needle clearing and picking up by the lander.

On a spring-needle knitting machine of the stitch-wheel type, backing or plush yarns that are wiry are hard to control. After the yarn has been pushed to the base of the needles by the clearing burr, there is no positive control of the yarn until it reaches the point where it is picked up by the lander. Hence, if the yarn is wild, it is free to rise on the needles and become enmeshed with the stitch burr.

When this condition occurs, the plush or backing yarn is knitted in with the stitch yarn. Such knitting, of course, damages the fabric. It may also cause the stitch burr to bind and smash the needles.

Damages from this cause may be prevented by installing a backing- or plush-yarn cam.

The cam is made of spring wire. Its

Measured light shows how Cerfak makes fabrics "come clean"!

Houghton laboratory uses electric eye to determine scouring efficiency of detergents.

Houghton uses Reflectometer to compare detergent values. Note the swatches of fabric on the above report. These were artificially soiled, then washed in various detergent solutions, using the launderometer. To compare degree of cleanliness, we rely on an electric eye—the Reflectometer—which records reflected light. If it registers over 60 (72 is highest) the detergent is good, deserves careful study and full evaluation. Cerfak synthetic detergents rate consistently high, not only in the laboratory evaluation, but in actual plant use. There is a type best suited for each specific scouring job—headed by Cerfak 1300, a non-ionic detergent and wetting agent with a wide application range. Ask the Houghton Man for data and prices, now. E. F. Houghton & Co., Philadelphia or Charlotte.

HOUGHTON'S CERFAK

shape is determined by the position of the clearing wheel and the stitch wheel in relation to the cloth cam. A loop formed at one end of the wire permits mounting the cam with a machine screw on the cloth cam, as shown in the sketch. Drill and tap a hole in the cloth cam for the screw.

Bend the wire so that it just clears the clearing burr. Make another bend very close to the base of the needles (allowing just enough room for passage of the plush yarn) in order to bring the cam parallel with the top of the cylinder. Cut the end of the wire as close to the stitch burr as possible without causing danger of actual contact between the wire and burr.

The bend at the base of the needles, near the clearing burr (where the yarn first contacts the cam), should be curved so that the yarn is subjected to a smooth, gliding motion rather than an abrupt change of direction.

After the cam is properly formed, it should be raised above the needles and bent outward so that it will exert pressure against the backs of the needles. This bend prevents the plush yarn from getting between the cam and needles. It will also be helpful to grind flat the surface that contacts the needles.

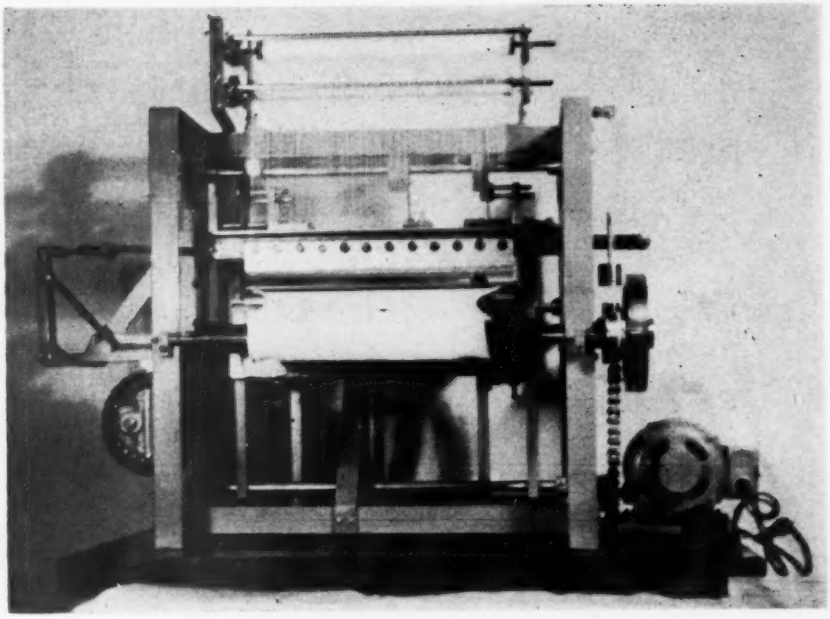
Care should be taken to keep the cam square with the base of the needles. A square cam closes up any gaps into which the yarn might be pulled.

It is a good practice to make up a supply of wires of approximately the correct lengths, with the mounting loops formed. However, the actual bending and fitting should be done at the machine. *(K-947) Albert M. Young, Jr., Philadelphia, Pa.*

12-in. Tricot Machine Finds Many Mill Uses

We have a 12-in. tricot knitting machine that has proved very useful for knitting sample fabrics and also for demonstrating the principles of tricot knitting. A new warp for the sample machine can be made in a few minutes. Details such as warp ratio, stitch, and fabric quality of a new pattern can be worked out before a standard machine is taken out of production. Thus, we save time and waste yarn.

The machine was started as a hobby several years ago. Only material that was easy to obtain and required little machine work was used; and most of the parts were worked out by trial and error. After the machine was completed, it was so useful that it has paid for itself many times.



This 12-in. tricot machine, built by a mill man as a hobby, is used in the mill for knitting samples and for demonstrating principles of tricot knitting. It measures 28x17x24 in. Samples knitted on the machine include rayon, cotton, silk, and nylon fabrics.

The machine, shown in the accompanying photograph, knits cloth 12 in. wide. The overall dimensions are: length, 28 in.; width, 17 in.; height, 24 in.

The frame was made of 1¼x1¼-in. angle iron, reinforced at each corner. The arms supporting the needle bar were made from 1¼x½-in. cold-rolled steel. The steel was heated in a forge and formed to the desired shape on an anvil.

The arms that support the sinker and pressure bars were made of 1x½-in. cold-rolled steel. The guide bars were also made from angle iron, cut down to 1¼x¼ in. All the shafts are ½-in. cold-rolled steel. The bearings are ½-in. cast-iron pillow blocks.

There are nine cams mounted on the main shaft. They were made out of ⅛-in. steel plate and are in one piece. The cam bosses or collars were cut down from small aluminum-shaft couplings. The cam rollers are ⅝-in. cold-rolled steel and turn on $\frac{5}{16}$-in. axles.

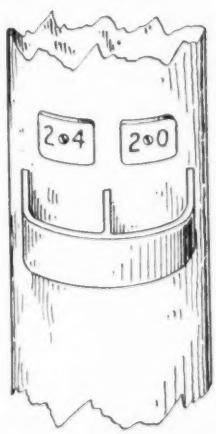
The pattern wheels have 24 studs and are driven by either a two- or three-flange wheel. By using one or the other of these flange wheels to drive the 24-tooth gear, it is possible to get either an 8-to-1 or a 12-to-1 gear ratio. The pattern wheel studs are $\frac{5}{16}$x1-in. cap screws and are adjustable for changing patterns. A small set-screw against the side of each stud holds the stud so that it will not come loose.

The tension rods are ¼-in. cold-rolled steel and are the simple push-spring type. The warp is wound on 1-in. wooden rolls. Warp tension is maintained by a rope drum, by means of a brake rope and adjustable spring. The cloth roll is 1½-in. in diameter and is operated by a rope running off a drum through a pulley, with weights on the other end of the rope.

The needles, guides, and sinkers are the regular 28 gage used in all the older tricot machines. The machine is driven by a 1/20 hp. gear-reduction motor at 40 rpm. (5 racks per hour.)

All types of rayon, cotton, silk, and nylon yarns from 150 den. to the finest sizes of silk have been successfully used on the machine. *(K-931) Leonard F. Turnbull, Daisy, Tenn.*

Identification Tags Prevent Mixing of Needles



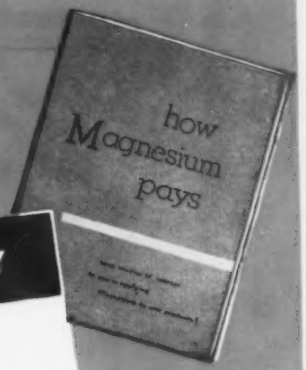
Knitting-needle identification is aided by metal tags fastened above the needle trays.

Many models of spring-needle knitting machines have more than one head to a table. Production schedules often require that different gages be set up on the same table. When this is the case, the operator must handle

Take a leaf from this revealing

new book!

Here's the inside story on how manufacturers of a wide range of products—from parts for aircraft to portable tools—have found that it pays to use magnesium. It's a book of actual case studies of successful magnesium applications—a book that will be of direct interest to you.



INDUSTRIAL MACHINERY

FABRIC TUBES FOR KNITTING MACHINES

PROBLEM

Fabric tubes fit into the center cylinder of seamless hosiery knitting machines. The interior surfaces of the tube must be smooth to prevent snagging of the hose. Tin, an expensive and scarce metal, had been the material commonly used for the construction of the tubes. Tin plate was unsatisfactory because it soon wore off. Manufacturing this part more cheaply required a material more plentiful and cheaper than tin, and one that would simplify fabrication assembly.

SOLUTION

Extruded magnesium tubing, flared at one end, is used in this application. The tube is flared at one end with a fin staked in at an angle on the flared end. The use of magnesium substantially reduces the cost of fabricating this unit. Tin, which was used previously had to be rolled, soldered, and highly polished on the interior. Magnesium tubing needs only to be flared and given a smooth anodic treatment. As a result, the price of the fabric tube has been reduced from $3.73 per unit in tin to 80 cents per unit in magnesium.

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needles of different gages on adjacent heads.

Since the needle trays are built in a single unit, it is easy for the operator to select the wrong needles. The chance of making the error is usually increased by the fact that gage identification is removed with the paper wrapping. A hurrying operator can easily confuse similar gages.

When such an error occurs, some fabric is produced before the needle lines are detected. The poor cloth and the wrong needles must be removed, and a stitch-on is required.

Gage-identification tags can be made and installed with little trouble or expense. The tags serve a double purpose: in addition to identifying the needles, they provide a visual reminder to the operator that more than one gage of needles is in use on the table.

In making the tags, any lightweight sheet metal can be used. Cut small squares of the metal, and round off the edges. Punch a hole through the center of the metal, and stencil on the gage number of the needles. Fasten the metal above the tray in which needles of that gage will be kept. Make a metal identification tag for each tray of needles.

When the fixer changes the gage of needles in any head, he should remove the old tag and replace it with one that indicates the gage of the new needles. *(K-945) Albert M. Young, Jr., Philadelphia, Pa.*

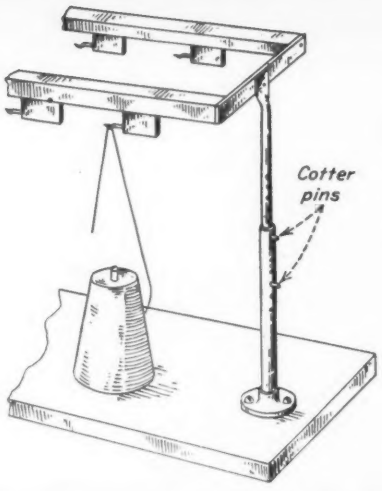
Stop-Motion Frame Is Lowered for Fine Yarns

Spring-needle electric drag motions should be placed as high as practicable within reach of the operator. The reason for maximum height is that fewer yarn breaks occur. A long yarn travel between the supply cone and the feed allows sufficient time for the machine to stop before the drag breaks the yarn.

In knitting rooms where yarns of varying sizes are handled, it is sometimes desirable to have means for adjusting the height of the drag motion. Yarns of good tensile strength can stand the strain of the long pull, but fine worsted yarns may break under the normal drag of being pulled into the machine.

When fine, tender yarns must be used, the strain can be eased by bringing the drag motion to the lowest point that will allow a safe amount of yarn between the supply package and the feed.

The frame holding the drag motions may be made adjustable. Mounting

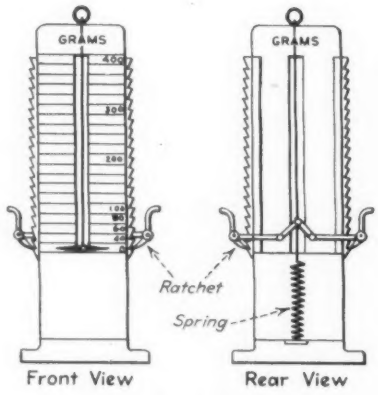


Knitting-yarn drag can be adjusted for fine yarns by mounting the stop-motion frame on adjustable legs. The legs shown here are made of pipes.

brackets, such as the one shown in the accompanying sketch, give satisfactory adjustment. Ordinary pipe can be used to make the stands. The upper section telescoping into the lower section makes adjustment easy.

Drill a series of holes in each length of pipe, as shown. The holes should be spaced at regular intervals. A cotter pin or machine screw placed through holes in the telescoped pipes will hold the frame in position. Standard flanges may be used to attach the pipes at either end, or the pipe ends may be flattened in a vise and drilled for wood or machine screws. *(K-946)*

Single-Strand Tester Gives Yarn Break in Grams



A single-strand break tester for fine yarns can be made as shown here. The yarn is fastened to the hook at the top of the gage and pulled upward until it breaks. Ratchets hold the indicating finger at the point of break until the gram reading can be taken.

We have devised a gage for measuring the breaking strength of a single strand of fine yarn. As shown in the accompanying sketch, the gage indicates yarn breaking strength in grams.

The device consists of a metal base with a vertical extension of sheet metal. The base rests on a table or desk top and rigidly supports the extension. In the center of the extension, a narrow slot is cut lengthwise. An indicating finger moves up and down this slot as yarn is tested. A gram scale on the sides of the slot is marked with the number of grams of tension required to raise the indicator to a specified mark.

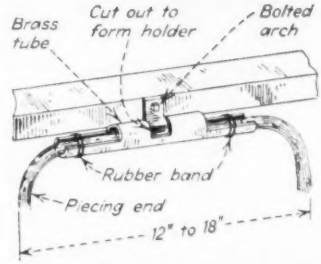
A piano wire is fastened to the indicator. It extends up the back of the device and ends in a hook at the top of the gage. The yarn to be tested is fastened to this hook, and the yarn is pulled upward by hand until it breaks.

Ratchets at the sides of the gage move over ratchet teeth cut into the sides of the gage. When the yarn breaks, the ratchets engage the teeth and hold the indicator at the point it was when the yarn broke.

An extension spring connected to the base of the gage and to the indicating finger applies the required tension on the yarn.

Careful calibration of the gram scale is necessary. It is a good idea to recheck the calibration at intervals. *(K-938) H. J. Haas, Martinsburg, W. Va.*

Weaver's Piecing Ends Held by Lease-Rod Holder



Piecing ends can be held conveniently by holders made from damaged brass lease rods. Cut a section of the brass rod as shown here, and bolt it to the loom arch. Rubber bands will keep the piecing ends in place. (K-963)

Split Spacer and Rod Remove Frozen Bushing

Removing a bushing from a blind hole is often a hard job. Since the hole is closed at one end, the bushing cannot be tapped out. The only way to remove it is to pull it out.

In such a case, the bushing can usually be removed by the following method:

Get a piece of round steel stock that will fit snugly into the bushing. (The piece of steel should be about the same length as the bushing.) Drill a ¼-in. hole lengthwise through

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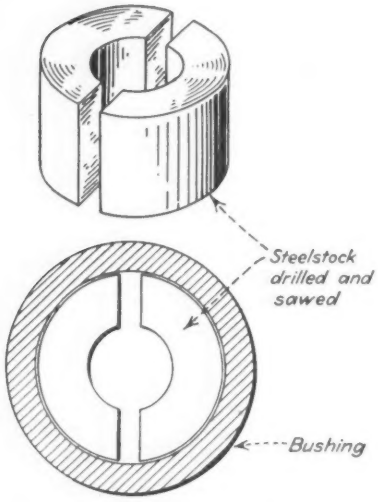


***A frozen bushing** can usually be removed by fitting two half pieces of steel rod inside the bushing and driving another steel rod into the center hole shown here. Turn the rod with a wrench to break the grip of the bushing.*

the center of the piece of steel; then saw the piece of steel in two, splitting the hole down the center.

Place these two half pieces in the bushing, and force a steel rod slightly larger than ½ in. in diameter into the hole in the center of the pieces. The two half pieces will be forced apart at the split and will firmly grip the bushing.

When the steel rod has been forced in to about the length of the bushing, turn the rod with a wrench. If the rod is of sufficient diameter to cause the steel pieces to grip the bushing properly, the bushing will turn with the rod. *(K-951)* W. E. Warner, *Essex, England*

Weld a Yardstick To Your Sample Dye Kettle

A stainless-steel yardstick attached to the inside of a sample dye kettle is a big help.

I have done a lot of sample dyeing, and most of my loss of time has been caused by hunting down a yardstick to measure the amount of water put in a dye batch.

When the operation is started, you have to look for the yardstick. When you have to add ingredients to get the shade you want, you usually have to look for the stick again. When the boss wants to check up on you, you have to hunt the yardstick again.

All of this lost time can be saved if you just weld a yardstick right to the kettle. *(K-970) Paul W. O'Neil, East Chelmsford, Mass.*

Cotton Hopper Damage Reduced by Dry Extinguisher

Insurance companies require that sprinkler heads be placed over all open hoppers in the opening room and picker room. These heads are a major part of a mill's fire-control program and have prevented many small fires from becoming large, costly ones.

However, each time a sprinkler head goes off, much damage is done. The cotton in the hopper is wet down, and all the slat aprons are soaked with water.

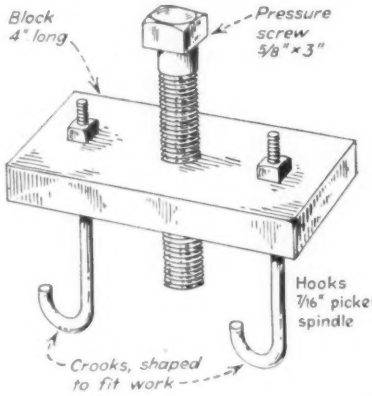
Before the machine can be started up again, the wet cotton must be removed, the aprons dried out, the bearings cleaned and lubricated, and the floor cleaned up. Usually, much time (sometimes several hours) is lost before the machine is back in production.

In many cases, this waste and loss of time can be avoided by the use of a carbon-dioxide bomb.

A portable bomb can be placed between the water sprinkler head and the top of the hopper. The bomb should be set so that it will go off at a lower temperature than the water sprinkler.

Perhaps 90% of the hopper fires can be put out by the carbon dioxide before the water head goes off. *(K-978)*

This Bending Tool Shapes Lifter Rods



***Shuttle-box lifter rods** can be shaped quickly with this tool. Place the hooks over the rod and apply pressure with the screw.*

It is often necessary for a loomfixer to shape a box lifter rod to adjust the boxes. Sometimes this is a time-consuming job; the fixer must take the boxes out of the loom, take them to the bench, return to the loom, and replace the boxes. Often these operations are repeated several times before the boxes line up with the reed and race plate.

I have devised a simple tool that will eliminate the removal of the boxes from the loom. The box lifter can be shaped as desired in a few minutes.

This tool is similar to a small gear puller; it can be used for that purpose by using different hooks.

The block or head of the tool consists of a 4-in. piece of rectangular metal. The hole for the pressure screw is drilled and tapped for a ⅝x3-in. setscrew. The holes for the hooks are drilled so that the hooks will fit loosely in them. The hooks are made from old 7/16-in. picker rods. They are threaded on one end and bent into a hook at the other end. They should be about 3 in. long.

To use the tool, loop the hooks over the lifter rod and apply pressure in the desired direction with the pressure screw.

The tool is also convenient for shaping other rods on a loom, such as shipper rods and brake rods. *(K-953)*

Temper Small Tools With Heat and Lead

Here is an easy way to temper a chisel, screwdriver, or punch. Heat the tool until it reaches a dark red color. Then tap it about ½ in. into a block of lead, and let it remain in the lead until it is cool.

When you are driving the hot tool into the lead, be careful of spattering hot lead. *(K-958) H. L. Crocker, Winston-Salem, N. C.*

Push-Button Switch Is Useful on Knock-Off

The electric stop-motion cut-out switch on a knitting machine is subject to much wear. Its parts are in motion each time the machine is started and again each time the machine is stopped. If a knitter is having excessive stop-motion failures with present equipment, a cut-out switch of the door-jam type used for lighting refrigerators and closets will solve his problem.

The operating lever on this type of switch is a protruding button. The button is long enough to allow adaptation to almost any type of starting handle. Installation of the switch is simple, the only requirement being that the cut-out be placed in a position where the starting handle will press in the button.

In some installations, it may be desirable to have the switch arranged so that the circuit is open when the button is depressed; others may require that the circuit be closed when the button is depressed. The direction of motion of the starting handle will determine which of the two types is necessary. *(K-944) Albert M. Young, Jr., Philadelphia, Pa.*

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Questions and Answers

Latch-Needle Machines Make Variety of Fabrics

Technical Editor:

We are enclosing three samples of knitted cloth. Can you give us the details of construction—that is, the type of machine used, machine gage, type of needle, etc.? (9258)

The samples can be identified as:

1. Melton-type cloth used, usually, in women's sport coats.
2. A short-cropped wool fleece used in women's and men's topcoats.
3. A patterned wool jersey also used in women's and men's topcoats.

Since the samples were quite small (1x2 in.), our analysis cannot be taken as absolutely final. There was not enough cloth to permit a recheck to be made. Therefore, the results of only one analysis can be given.

All three of the fabrics can be made on a spring-needle machine or a sinker-top, pattern-wheel, latch-needle machine. Samples Nos. 1 and 2 (the melton-type and the fleece fabrics) have a backing or lay-in yarn that is not tied to the stitch. These fabrics probably were made on latch-needle machines.

The melton-type cloth was made on an 18-gage, approximately 10-cut machine. Stitch yarn is 20/1; lay-in yarn is 18/1. Construction is all plain stitch, with 1-and-1 lay-in pattern set opposite. The pattern diagram would be:

The second sample (close-cropped fleece) has the same pattern. It could also be made on an 18-gage machine. The number of wales indicates about 9 cut. Stitch yarn is 20/1; lay-in yarn is 16/2. Courses are 14½.

The third sample (patterned wool jersey) apparently was made on a spring-needle machine of the Crane or Tompkins type. The sample does not contain a complete pattern. The pat-

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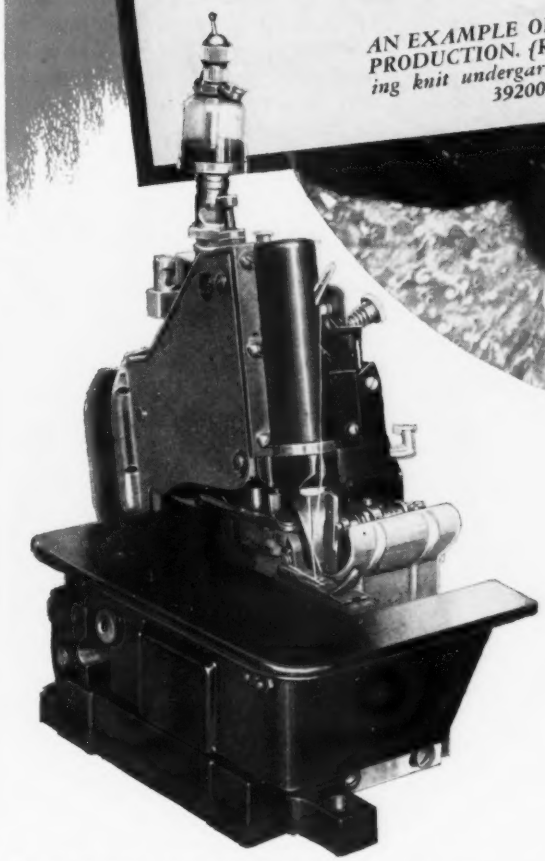
AN EXAMPLE OF HIGH SPEED PRODUCTION. (Right). Overseaming knit undergarments with Style 39200 AC.



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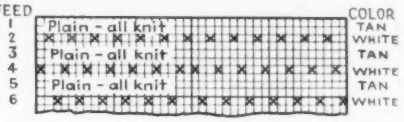
Questions and Answers

(Continued)

tern is herringbone, but the right-hand chevron is cut off close to the crest, or point; and it is impossible to determine whether the herringbone is balanced.

A 40-needle, balanced herringbone is shown in the following diagram:



This type of fabric and pattern can be made on a 32-in. cylinder, with 9 needles per in.—total needles, 920. Tan stitch yarn in the sample is 16/1, white yarn is also about 16/1, and courses are about 20 per in.

Intersecting Gill Box Has Two Advantages

Technical Editor:

What are the advantages of an intersecting gill box over an open gill box? (9255)

The advantages of an intersecting gill box over an open gill box are higher production and better fiber control.

An open box has only one set of fallers. If the machine is overloaded, sliver will ride over the faller pins; and uneven places in the top will be made. Production must be held down to a point that will avoid this overriding of sliver.

In an intersecting box, the top row of fallers intersect with the bottom row. This feature eliminates the sliver riding over the pins, and full production can be maintained.

Better fiber control is possible on the intersecting box because the fallers are closer to the front roll and also because the box operates without back draft. Some back draft is unavoidable in an open box. If the back draft is excessive, considerable fiber breakage occurs.

Cotton Canvas Treatment Has Many Possibilities

Technical Editor:

What chemicals are used to make cotton canvas, such as the inclosed sample, resistant to water, flame, and mildew? How are they applied? (9259)

Many types of resins are suitable as film formers for fabric treatment. Those most commonly used at present are phenol-formaldehyde and urea-formaldehyde. Chlorinated rubber, vinyl-chloride resins, and ethyl cellulose have been used with perhaps better results.

The use of a resin in fabric treating

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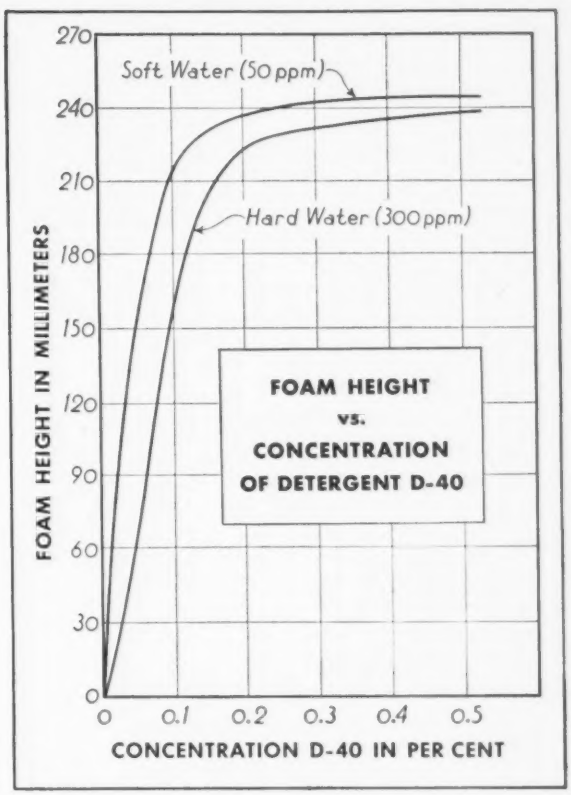

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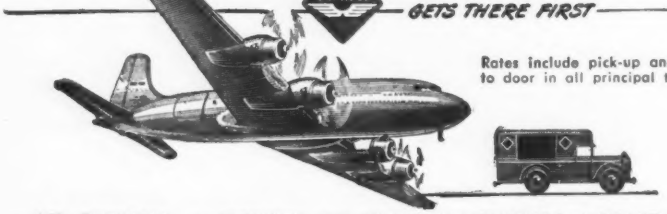

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Questions and Answers

(Continued)

helps to provide water resistance and also prevents "crocking" or rubbing off of the chlorparaffin-pigment mixture by forming a dry, continuous film.

The following may serve as an indication of the component parts and the ratios in which they are used in a treating formula:

Non-volatile vehicle (total)	29 to 32 (%)
Chlorinated paraffin	22 to 24
Resin	7 to 8
Pigment and fillers (total)	28 to 31
Antimony oxide	7 to 8
Calcium carbonate	8 to 8.5
Iron oxide	8 to 9
Coloring pigments	4 to 4.5
Mildew-proofing agent	1 to 1
Volatile vehicle (total)	43 to 37
(Choice of)	
Ketones	
Mineral spirits	
Varsol	
Stoddard solvent	
Xylol.	

A formulation such as outlined is usually prepared by grinding the pigment part of the formula with chlorinated paraffin. The grinding may be done either on paint rolls or (preferably) in a pebble mill. Not all of the chlorinated paraffin is required to wet down the pigments. The balance may be added before the mix is cut with a solvent. It is sometimes preferred to withhold the calcium carbonate until after the grinding operation is completed, as it is easily mixed into the compound by agitation.

The resin is dissolved in a portion of the solvent. Heat may be used for this operation when a solvent of reasonably high flash point is used. The resin cut is then added to the pigment-chlorinated paraffin mix, and this mixture is cut with the solvent to the desired solid content.

The fabric to be treated is passed through a trough containing the impregnating solution and then through squeeze rolls or over knife edges to remove the excess treating solution. The pickup of compound by the fabric may be controlled by adjustment of the rolls or knives. It is usually desired to obtain a pickup of approximately 50%.

The drying operation consists of removing the solvent by passing the treated fabric through an oven with forced draft, by festooning, or by dry cans. The heat treatment also sets up any heat-reactive resins, thereby providing the fabric with a dry finish.

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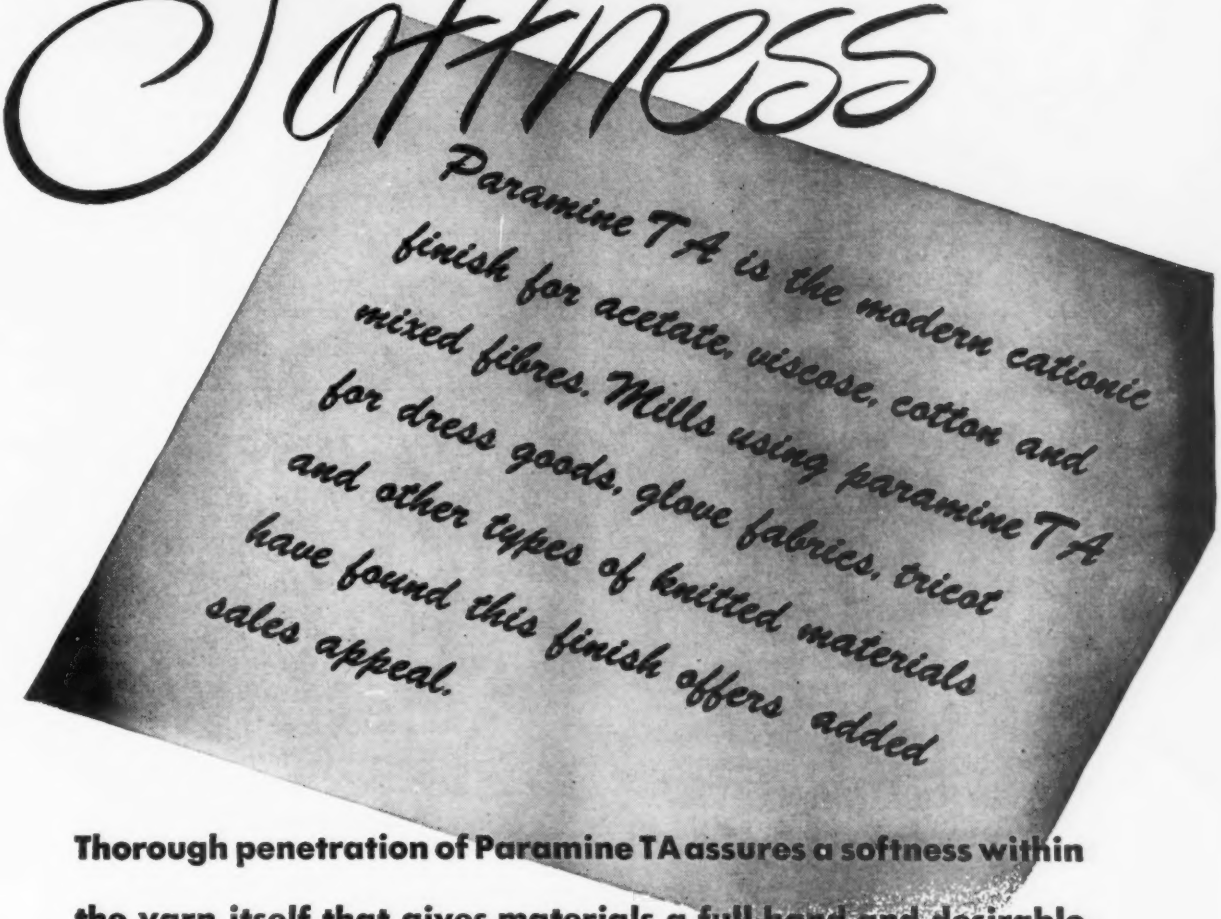
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have found this finish offers added
sales appeal.

Thorough penetration of Paramine TA assures a softness within the yarn itself that gives materials a full hand and desirable drape—its substantive action produces a durable, lasting finish

—Application is simple.

Use Paramine TA

*Reg. U. S. Pat. Off.

WRITE FOR DETAILS OR DEMONSTRATION

Arkansas Co. INC.

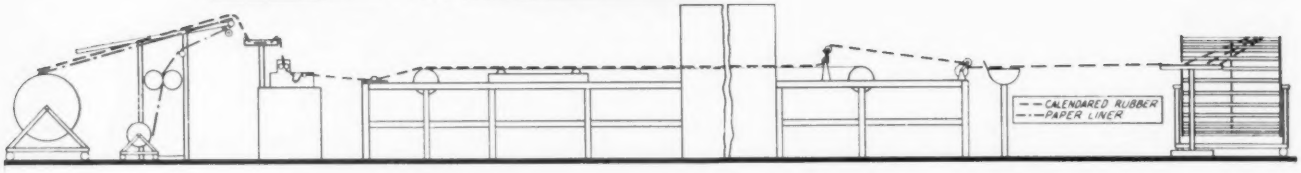
Manufacturers of Industrial Chemicals for Over 40 Years

NEWARK, NEW JERSEY

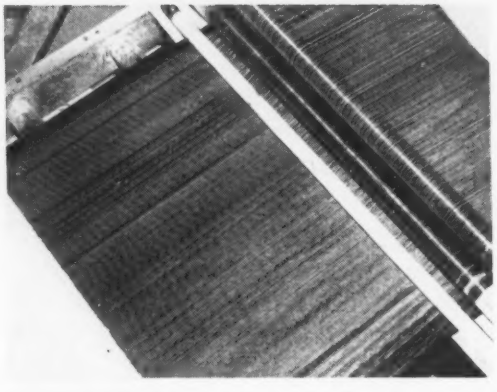
Note the small calender running a 9 inch width roll. Equipment cost is low compared to conventional methods.

New

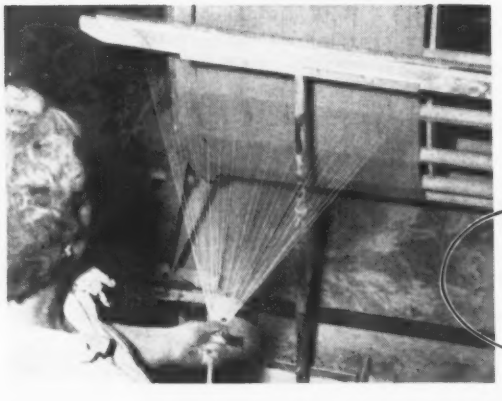
ANDAL PROCESS*



Sheet rubber from calender is conveyed to Andal cutter and cut in threads *before* vulcanization. Cutting waste is re-calendered.



Finished thread is taken off conveyor on vertical rolls and feeds through duster on to drums.



From drums the finished thread is inspected and chained.

PRODUCES BETTER CUT RUBBER THREAD AT LOWER COST . . .

Highly Practical in Units for 50,000 lbs. Annual Production and Up

★ **LOW INVESTMENT**
Small calender — No pot heaters — No large cutting drums.

★ **LOW LABOR COST**
Semi-automatic process from uncured thread to wind-up of finished thread.

★ **LOW RAW MATERIAL COST**
Plantation rubber and simple compounds — Thread cut before vulcanized — Scrap reworkable.

★ **LOW SPACE REQUIREMENTS**
Small floor for mills, calender, cutter and processing. Oven may be overhead.

PRODUCES HIGHEST QUALITY THREAD

- ★ Cut edges heat-sealed
- ★ Thread hot-wax coated
- ★ No liner or cutter marks
- ★ Long lengths
- ★ High tensile
- ★ Uniform cure

Write or cable for full details of this revolutionary low-cost process.

The ANDREWS-ALDERFER PROCESSING CO.
120 Ash St. AKRON 8, OHIO, U. S. A.

Franchise
ARRANGEMENTS

Now being negotiated for certain countries abroad. Rights include complete technical assistance in all phases of thread processing.

★ **ANDAL PROCESS**
Patented in the U. S. A. and foreign countries

TEXTILE WORLD'S

Guide to Exhibitors

at the

15th Southern Textile Exposition

Textile Hall, Greenville, S. C.

OCTOBER 4 to 9 inclusive, 1948

NAMES AND LOCATIONS of exhibits at the 15th Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 through 9, 1948, are given on this and the following pages.

Abbey Steam Specialty Co., Atlanta, Ga. See Johnson Corp.

Abbott Machine Co., Wilton, N. H. and Greenville, S. C.—Booth 317A. Winding machinery, but no products will be shown. Rep.: L. S. Ligon, S. A. Roane.

Acme Steel Co., Chicago, Ill.—Booth 489A. Steelstrap equipment, also Silverstitcher for stitching fiber shipping containers. Demonstrations of friction seal method of baling, of steelstrapping, and of carton stitching. Rep.: J. E. Ott, J. G. Bucuss, G. R. Easley, C. A. Carrell, M. M. Brown.

Aldrich Machine Works, Greenwood, S. C.—Booth 250. Synthetic-fiber blending and opening equipment, and air-conditioning equipment. Rep.: A. P. Aldrich, Jr., W. D. Wornall, J. E. Brown.

Allentown Bobbin Works, Inc., Allentown, Pa.—Both 316A. Bobbins and spools used in throwing and processing silk, rayon, nylon, and combination yarns. Rep.: Henry W. Mack.

Allen Co., New Bedford, Mass.—Booth 108A. Features high-speed warper creel, adjustable wooden loom-beam head, and high-speed warper beam. Rep.: L. E. Wooten, J. E. Oliver.

Aluminum Co. of America, Pittsburgh, Pa.—Booth 455, 456. Aluminum and magnesium products including cloth rolls, bobbins, spools, and rehabilitated loombeam with aluminum barrel. Features samples of castings, forgings, tubings, extrusions, and sheet products together with exhibit of methods of fabrication and essembly. Rep.: H. H. Nuernberger, C. Braglio, E. G. Kort, T. J. Wisecarver, K. Usher, E. J. Nelson, W. D. Mathers, F. Conrade, J. B. West, P. T. Teague, R. Smith, D. M. Johnston, H. A. Faisst, C. S. Mercer, W. G. Dow, G. Weiss, E. P. Stanier, G. Clement, H. A. Lilly, C. W. Scott, Ray Penrose, W. S. Ellis.

American Air Filter Co., Inc., Louisville, Ky.—Booth 464. Electronic air filters, featuring Electro-Airmat, a dry-type precipitator using paper filter; Electro-Matic, an automatic, self-cleaning precipitator; Electro-Cell, a plate-type precipitator. Rep.: John M. Rittelmeyer, Kirk Cousart, Howard Pound, Harry J. Noles.

American Crayon Co., Sandusky, Ohio.—Booth 322, 323. Specialized marking crayons and chalks, featuring Empire textile mill crayons, lumber crayons, American "5000" marking crayon, etc. Also floor finish under brand Kaysan. Rep.: John Hester, Lon Watters.

American Key Products, New York, N. Y. See Ira L. Griffin.

American Lava Corp., Chattanooga, Tenn. — Booth 343. Custom-made thread guides for all textile applications, featuring adaptations to various wearing problems and to control of tensions. Rep.: G. E. Richter, J. B. Shacklett, W. M. Brown.

American Lumber & Treating Co., Chicago.—Booth 436. Wolmanized pressure-treated lumber for mill and house construction protected against decay and termites. Rep.: R. B. Putnam, O. W. Boehm, T. J. Flynn, J. E. L. McCall.

American Monorail Co., Cleveland, Ohio.—Booth 111, 112. Automatic cleaning equipment for machines and ceilings; and monorail handling equipment, manual and automatic; new ceiling units. Rep.: J. P. Lawrence, C. V. Miller, E. H. Doerger, H. A. Rehfeld, E. F. Kulp, L. R. McEachern, O. L. Pogue, W. L. Adamson, C. O. Setzer, L. C. Bobo, E. G. Peterson.

American Paper Tube Co., Woonsocket, R. I.—Booth 108. Complete line of textile tubes, quills, and bobbins. Rep.: H. L. Amrhein, R. J. Guerin, E. H. Guerin, Jr., D. M. Beattie, S. Adams, E. L. Birch, J. L. Coffield, Jr.

American Pulley Co., Philadelphia, Pa.—See Greenville Textile Supply Co.

American Safety Table Co., Inc., Reading, Pa.—Booth 227. Power driving equipment for industrial sewing machines, featuring Amco individual motor drive and new yoking table and ½-die collar pressing and turning machine. Rep.: Julian C. Frankel, Bob Moreland, B. Batchelor, M. T. Voigt.

American Wool & Cotton Reporter, Boston, Mass.—Booth 208. Textile publishers.

Anchor Post Fence Div., Anchor Post Products, Inc., Baltimore, Md.—Booth 236. Anchor industrial fence. Rep.: R. D. Logee, P. F. Cuttino, T. F. May, Marion Boyd, Carol Noe.

Armstrong Cork Co., Lancaster, Pa.—Booth 140. Accotex cots and aprons, cork cots, loom supplies, and roll-shop equipment, featuring a new heavy-duty, cot-buffing machine which will handle synthetic as well as cork cots. Rep.: W. B. Tucker, T. L. Hill, J. V. Ashley, H. H. Jordan, W. T. Coker,

TEXTILE WORLD will maintain headquarters in Booth 223,224 at the 15th Southern Textile Exposition. A cordial invitation is extended to visitors to make this booth their business headquarters while in Greenville.

TEXTILE WORLD will be represented during the show by Edwin D. Fowle, publisher, C. W. Bendigo, editor-in-chief; William Buxman, manager; and by William B. Dall, William A. Newell, Prentice M. Thomas, C. Mallard Bowden, A. W. Fisher, R. L. Chisholm, H. C. Harvey, J. G. Sabella, M. C. MacKenzie, Ralph C. Maultsby, William G. Ashmore, Earle Mauldin, and C. Norris Rabold.

Jr., J. F. Kline, A. C. Littlejohn, W. A. Simmons, P. S. Bowden.

Armstrong Machine Works, Three Rivers, Mich.—Booth 429. Steam traps, steam humidifiers, and unit-type strainers; featuring small size, high capacity, non-airbinding, self-scrubbing steam traps; also high capacity and low cost humidifiers. Rep.: O. E. Ulrich, A. T. Shepherd, Theo. M. Abbey.

Ashworth Bros., Inc., Fall River, Mass. —Booth 120, 121. Card clothing and wire conveyor belt. Rep.: R. C. Ashworth, J. M. Reed, C. I. Simms, A. E. Johnston, A. E. Johnston, Jr., Thurman Hart.

Atlanta Brush Co., Atlanta, Ga.—Booth 453, 454. Full line of textile brushes featuring new long-lasting materials, especially nylon and other plastic-filled brushes. Rep.: T. C. Perkins, Howard R. Cook, Wm. C. Perkins, George B. Snow, Fred Winecoff.

Atlanta Paper Co., Atlanta, Ga.—Booth 245. Shipping containers for textile products, featuring shipping of large loads and attractive cartons for merchandising finished goods at point of sale. Showing Belsinger corrugated containers, and paper specialties. Rep.: K. V. Robinson, Jack Belsinger.

Atlantic Gelatin Div., General Foods, Inc., Woburn, Mass. See Ira L. Griffin.

Aurora Pump Co., Aurora, Ill.—Booth 134A, 135. See Mechanical Equipment Co.

The Bahnson Co., Winston-Salem, N. C.—Booth 247A. Industrial humidifying and air-conditioning equipment, featuring unit humidifiers, atomizers, unit air-conditioning equipment, central-station air-conditioning equipment temperature controls, humidity controls, electric and pneumatic controls, air-cleaning equipment, valves, spray nozzles, and grilles. Rep.: S. C. Stimson, I. L. Brown, DeParx Stimson, R. B. Crosland.

Barber-Colman Co., Rockford, Ill.—Booth 244. Winders, warpers, and other textile machinery. Reception space without display of products. Rep.: J. H. Spencer, N. H. Alford, S. R. McElroy, E. W. Rogers, J. C. Ballard, D. L. Hall, H. A. Warren.

Barco Mfg. Co., Chicago, Ill.—Booth 301, 302. Ball, swivel, and revolving joints, featuring flexibility and long wearing qualities. Rep.: H. S. Kuhn, B. T. Conybear, F. O. Nixon.

S. D. Barringer Co., Atlanta, Ga.—Booth 251C.

Bassick Co., Bridgeport, Conn.—Booth 439. Industrial casters, featuring thread guards and heavy-duty, all-forged-steel casters. Rep.: A. J. Israel, E. P. Ripley, R. H. Bragdon.

Babson Mfg. Co., Greenville, S. C.—Booth 327.

Belting Basket Co., Belting, Mich. See Edgar E. George.

Bijur Lubricating Corp., Long Island City, N. Y.—Booth 104. Lubricating systems.

Birch Bros., Inc., Somerville, Mass.—Booth 218. Textile machinery, featuring new filling straightener, patent adjustable-slot vacuum-extractor box, Supreme butt-seam gray-room sewing machine, and conical opener; also heavy-duty ball-bearing scutcher, Coronation sewing machine, etc. Rep.: H. W. Birch, J. C. Cosby, C. W. Birch, Jr., R. Briggs.

Bowen-Hunter Bobbin Co., East Corinth, Vt. See Greenville Textile Supply Co.

Bradley Washfountain Co., Milwaukee, Wis.—Booth 305, 306, 307. Washfountains, multi-stall showers, and drinking fountains. Rep.: Charles H. Berenger.

Breuer Electric Mfg. Co., Chicago.—Booth 483A. Vacuum cleaners. Rep.: G. W. Breuer, A. M. Anderson.

Brown Instrument Co., Philadelphia, Pa.—Booth 420, 421, 422. Industrial instruments, featuring pneumatic time-pattern temperature transmitter, pneumatic temperature receiver, recording thermometer controller, circular chart Moist-O-Graph, wet-and-dry-bulb recording control thermometer, mechanical Air-o-Line flow controller, recording-integrating mechanical flow meter, indicating pressure controller, circular chart electronic controller. Features improvements in economy and quality by application of these instruments. Shows an entirely new thermometer with built-in timer and a completely redesigned all-electronic Moist-O-Graph. Rep.: K. Selden, jr., D. W. Choate, T. Pitts, E. Andrews, G. W. Massey, R. E. Fishburn, C. W. Bowden, Jr.

Buensod-Stacey, Inc., New York, N. Y.—Booth 209. Features textile-type central-station humidifier, adjustable intermittent humidity controller, and Metalast protective coatings for use on textile air conditioning equipment. Rep.: A. C. Buensod, R. O. McGary, R. M. Warren, Jr., Owen Merwin.

Burlington Engineering Co., Graham, N. C.—Booth 492. Featuring Inconel package yarn-dyeing machine. Rep.: J. A. Okey, W. J. Newcomb, D. L. Lomax.

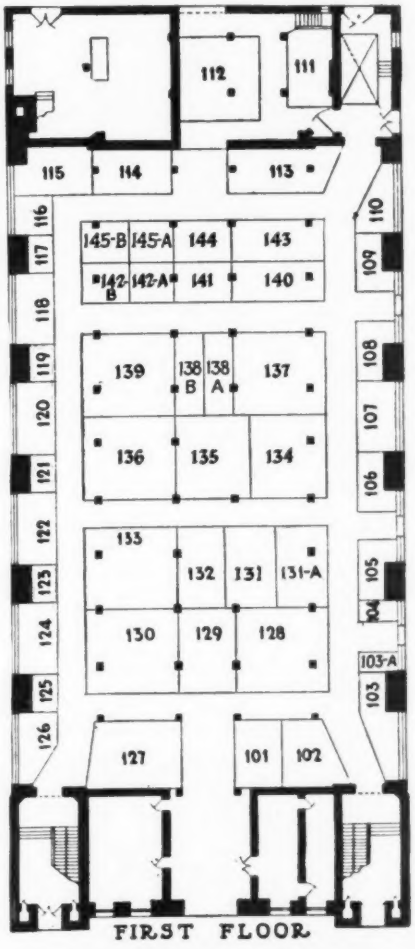
Burroughs Adding Machine Co., Detroit, Mich.—Booth 351, 352. Machines for handling billing, accounts receivable, and complete accounting plans as well as payroll, wage accrual and summary lists. Features new calculator and new calculating billing machine. Shows new desk machines. Rep.: H. H. Daywitt, E. C. Dawson.

Carolina Belting Co., Greenville, S. C. —Booth 246. Rusco strapping and endless-woven belting, Hay leather aprons and tapes, and Punch-Lok products. Features demonstrations and tests. Shows a "spinginny" made about 1850 which starts with seed cotton and gins, cards, and spins continuously all on the same machine. Rep.: Peter F. Madsen, James E. Hay, C. H. McKee, Earle W. Sargent, C. T. Allen, Jake Slaughter, Fred W. Hesse, Charles F. Miller.

Clark Equipment Co. (Clark Tructractor Div.), Battle Creek, Mich.—Booth 138B, 139. Will show 2000-lb. battery-powered clipper fork truck equipped with new Clark universal cotton clamp which grasps bales by their sides; one 4000-lb. battery-powered car-loader fork truck with Clark Hi-Lo-Stack uprights; one 2000-lb. gas-powered clipper fork truck with tapered chisel forks. Rep.: James H. W. Conklin, Russell F. Oakes, Everett M. Sharp, George Hewitt, George E. Boyce, E. V. Wiley, V. O. Snyder, Peter Paul Lukas.

Clark Mfg. Co., Cleveland, Ohio.—Booth 134A, 135. Fluid controls including inverted buckets, open buckets, and float-type steam traps; pressure regulators and reducing valves; strainers and steel globe valves. New No. 60 inverted-bucket steam traps for pressing machines, tracer lines, drying tables, etc. Rep.: John L. Mainwaring, Wm. P. Webster, Wm. T. Harding, Jr., R. S. Hudgins, Jr., John Q. Marshall. See Mechanical Equipment Co.

Clinton Industries, Inc., Clinton, Iowa. —Booth 205, 206. Starches. Rep.: R. C. Rau, Grady Gilbert, B. L. Estes, Jack Gibson, Geo. E. Corson.



Booths 101 to 145 on first floor

Coffing Hoist Co., Danville, Ill.—Booth 426. Hoists, featuring Safety-Pull ratchet-lever hoists, Quick-Lift electric hoists, Model Y-C spur-geared chain hoists, I-beam trolleys, Coffing hoist-jack, and Mighty-Midget puller. Rep.: J. R. Coffing, F. L. Dwiggins.

Colson Corp., Elyria, Ohio.—Booth 474. Casters and truck equipment for textile mills, featuring quiet easy-rolling wheels with new thread guards. Rep.: F. A. Harmon.

Columbia Supply Co., Columbia, S. C. —Booth 479. Machine tools and textile specialties, featuring Ezy-Apart spinning-frame-drum spreader and arbor remover, and anti-friction loom thrust bearings. Rep.: W. F. Renner, Henry Essick, C. L. Bradley.

Comer Co., Atlanta, Ga. See Durant Mfg. Co.

Container Corp. of America, Philadelphia, Pa.—Booth 314, 315, 316. Cartons and shipping containers especially for textiles, featuring high-style textile packages. Rep.: J. E. Purvis, F. B. Bruce, M. Gaukerud, J. P. Leavitt, Mrs. R. G. Macintosh, Miss M. K. Heisler.

Continental-Diamond Fibre Co., Spartanburg, S. C.—Booth 106. Vulcanized fiber, roving cans, trucks, and boxes. Features Celoron, Dilecto, and Haveg laminated plastics for gears, loom parts, bearings, bobbins, etc. Rep.: C. L. Simmons, A. D. Gray, C. L. Simmons, Jr., J. M. Stone.

Corn Products Sales Co., New York, N. Y.—Booth 457. Starch and dextrine products for the textile industry. Rep.: E. W. Schmitt, A. A. Harden, W. Rouse Joyner, H. L. Bailey, L. Hawley Kelley, James R. Hill, Earl G. King, Gordon E. Wood, J. Alden Simpson.

Cotton-Textile Institute, Inc., Div., of Technical Service, Clemson, S. C.—Booth 228. Cotton-fiber testing equipment, featuring Roller-Smith precision balance, Suter-Webb duplex cotton-fiber sorter, Hertel Fibrograph, Pressley flat-bundle fiber tester, microscope, Micronaire. Rep.: J. T. Wigington, H. G. Beasley, H. L. Evans.

Dana S. Courtney Co., Chicopee, Mass. See Greenville Textile Supply Co.

Curtis & Marble Machine Co., Worcester, Mass.—Booth 239. Textile finishing machines not shown. Reception space at booth. Rep.: Ralph L. Marble, Frank H. MacKay, Leland F. Remington, Walter F. Woodward.

Cutler-Hammer, Inc., Milwaukee, Wis. —See Greenville Textile Supply Co.

Cutler Textiles, Inc., Greensboro, N. C. —Booth 248A. Shows line of Dixon Lubricating Saddle Co. of Bristol, R. I. Featuring replaceable Slixonice bearings, saddles, and cap bars on a 48-spindle frame.

Daily News Record, New York—Booth 320. Textile publishers.

Darnell Corp., Long Beach, Calif.—See Greenville Textile Supply Co.

Dayton Rubber Co., Dayton, Ohio—Booth 134. Natural and synthetic rubber textile accessories for looms, spinning frames, and other equipment, including pickers, lug straps, roll coverings, aprons, slasher rolls, etc. Features new Type SE roll covering for synthetics, also new slasher rolls, condenser tape, rub aprons, etc. Rep.: William L. Morgan, Thomas W. Meighan, Joseph L. Davis, Thomas A. Sizemore, Harold P. Goller, Walter W. Platt, Harvey M. Manchester, Kenneth K. Karns, Charles J. James, Emory L. Howell, John T. Edwardo, J. O. Cole.

Detex Watchclock Corp., New York, N. Y.—Booth 345. Watchmen's clocks, featuring the new Detex Guardsman tape watchclock. Rep.: E. J. Demarest, P. M. Lancaster, C. A. Butterwirth, J. T. Smith.

Devoe & Raynolds, New York, N. Y.—Booth 229. Paints of all kinds, featuring those for textile mill use.

Divine Bros. Co., Utica, N. Y.—See Edgar E. George.

Dixon Lubricating Saddle Co., Bristol, R. I.—See Cutler Textiles, Inc.

Dodge Mfg. Co., Mishawaka, Ind.—Booth 142A. Materials handling equipment.

E. I. du Pont de Nemours & Co. Inc., Wilmington, Del.—Booths 443, 444, 445, 446, 447. Rayon, nylon, dyes, chemicals, and other products for the textile industry.

Durant Mfg. Co., Milwaukee, Wis.—Booth 226B. Operating display of Productimeter counters for textile uses including stroke, revolution, predetermined, double-deck, and lineal electric counters and tachometers. Rep.: R. W. Winkler, M. E. Herndon, S. R. Hogg.

Eastern Airlines, Inc., Greenville, S. C. —Booth 110B.

Edgcomb Steel Co., Philadelphia, Pa.—Booth 466, 467. Stainless steel for the textile industry. Rep.: Carl S. Vogel, John B. Owen, Frank F. Rose, W. Paul Holt, Thomas A. Wilder, Leslie Edgcomb, Jr., Edward M. Jackson.

Elastic Stop Nut Corp. of America, Union, N. J.—Booth 216A. Elastic stop nuts, featuring their use on Draper and Crompton & Knowles looms, and on the Whitin-Schweiter bobbin winder. Rep.: C. S. Hanson, J. D. Heaslip, A. K. Whitaker, Bruce F. Linck.

Eriez Mfg. Co., Erie, Pa.—Booth 487. Magnetic separation without electricity, featuring magnetic pulley, magnetic hump for pneumatic lines, and plate-type separators, including complete line of sizes and shapes. Particularly features new Peralta-roll magnet, a compact unit especially for the protection of Peralta rolls. Rep.: R. F. Merwin, R. A. Roosevelt, E. C. Miller, B. C. Klingensmith.

Joseph W. Eshelman & Co., Birmingham, Ala.—See Trabon Engineering Co.

Esso Standard Oil Co., Columbia, S. C. —Booth 142B. Petroleum oils and solvents particularly applied to the textile industry. Rep.: R. J. McCarley, Jr., D. K. Montgomery, U. G. Crook, J. B. Mayer, W. H. FitzSimons, L. R. Ambrose, Jr.

Fairbanks Co., New York, N. Y.—Booth 102. Manually operated hand, platform, and floor trucks for textile applications; industrial truck casters and wheels; bronze and iron body valves; pipe fittings. Rep.: Charles L. Haslup, Hugh M. Sims, M. A. Chalverus, Robert G. Macbeth.

Faultless Caster Corp., Evansville, Ind. —Booth 481. Casters. Rep.: C. B. Noelting, J. H. Davis, J. R. Stallings.

Fibre Specialty Mfg. Co., Kennett Square, Pa.—Booth 478. Hard vulcanized fiber roving cans, fiber mill trucks, Dreadnaught trucks, Hercules trucks, doff trucks, mill boxes, and plain and Steel-Klad fiber. Rep.: G. B. Scarlett, Ralph Woods, H. R. Chandler, R. A. Craig, C. C. Hannum, Harold Ingram, R. G. Henderson, B. C. Plowden.

Finnell System, Inc., Elkhart, Ind.—Booth 110. Floor-maintenance equipment, including combination scrubber, vacuum machines, and portable machines, together with accessories, cleaning compounds, and other supplies. Features new 18-in. power-driven combination scrubber-vacuum machine, designed for use in narrow aisles. Rep.: J. L. Anderson, L. E. Arnold, J. T. Care, A. P. Sears, W. L. Finnell.

Fischer & Porter Co., Hatboro, Pa.—Booth 340. Variable-area-type instruments for flow measurement and automatic flow control. Features adaptability to highly corrosive fluids, new pneumatic control mechanism, and continuous viscosity measurement and control; a new Rato-Tronic remote flow controller for rates as low as 1 cc. per min. Rep.: H. Kockritz, C. Palmer.

Fletcher Works, Philadelphia, Pa.—Booth 124. Textile machinery including throwing machinery, narrow fabric looms, extractors for fibers and fabrics, chemical centrifugals, shuttles, spindles, jacquard machines, etc.

Foxboro Co., Foxboro, Mass.—Booth 412, 413. Instruments for process measurement and control, featuring Model 40 dual to control liquid level and other characteristics; elapsed time-temperature recording controller in regular as well as deferred action type; multi-record Dynalog recorder which prints two to six records on a single chart; roll-surface temperature recorder; differential pressure transmitter, dewpoint recorder; dial-type thermometers, etc. Rep.: H. O. Ehrisman, W. H. Ridley, W. W. Barron, Joseph Esherick, Galen Clark, E. W. Prendergast, S. C. Alexander, J. M. Waters, R. E. Beers, H. H. Michelmore.

Fuller Brush Co., Hartford, Conn.—Booth 225C, D. Brushes for textile machine and general use, featuring especially those for cotton and wool carding, thread dresser, wool dabber, blanket washer, etc., as well as fiber brooms, roller brushes, rail brushes, finger brushes, etc. Rep.: L. H. Carl,

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The 15th Southern Textile Exposition will open at 10:30 a.m. on Monday, Oct. 4, 1948, at Textile Hall, Greenville, S. C. It will continue daily from 9:30 a.m. to 9 p.m. until it closes on Saturday, Oct. 9, at 4 p.m. All space has been taken by over 200 exhibitors of textile machinery, equipment, accessories, supplies, materials, and parts. W. G. Sirrine is president and treasurer of Textile Hall Corp., which manages the show; Alan B. Sibley is vice president, and Miss Bertha M. Green is secretary. The first show in the series was held in Greenville Nov. 2 to 6, 1915. Others have been held in 1917, 1919, 1920, 1922, 1924, 1926, 1928, 1930, 1932, 1935, 1937, 1939, and 1941.

N. L. Parsons, C. G. Rowlend, M. K. Young, S. F. Henry, E. W. Mason, R. S. Hockett, R. L. Whitelaw.

A. F. Fyans, Fall River, Mass.—Booth 416. Machinery and supplies.

Garratt-Callahan Co. of New York Inc., New York, N. Y.—Booth 328A. Cleaning compounds covering variety of commercial uses. First exhibit of these products to the industry. Rep.: H. M. Gray, A. H. Hawkinson, B. L. McCaskill, J. W. Morris, W. J. Sciutti, C. T. Boulware.

Gates Rubber Co., Denver, Colo.—Booth 341, 342. Textile machinery accessories including reversible pickers, harness strapping, lug straps, textile mill air hose, take-up roll covering, cone belts, evener belts, and card bands; also full line of V-belts. Shows working model loom featuring Gates accessories and demonstrate Tex-Hide resilience and advantages of concave sidewall V-belts. Rep.: Robert Denslow, Harold Johnson, Al Poehlman, Herb Thrower.

Edgar E. George, High Point, N. C.—Booth 483. Divine Bros. line of industrial casters and wheels. Features the Steel-Wate casters and canvas cushion wheels, with tires made of assembled blocks of bias-cut canvas. Rep.: C. M. Mead, W. C. Beddoe, Edgar E. George.

Gilman Paint & Varnish Co., Chattanooga, Tenn.—Booth 435. Improved mill white paints, exterior and interior house paints, bobbin enamels, and machinery enamel. Rep.: R. B. Olney, J. M. Isom, W. P. Dobson, W. D. Gilman, III, L. C. Teeters, E. L. Gott.

L. H. Gilmer Co., Philadelphia, Pa.—Rep.: H. B. Allison, E. F. Wood, R. Y. Case, W. W. Conard, P. M. Wright. See Greenville Textile Supply Co.

Girdler Corp., Louisville, Ky.—Booth 240, Votator apparatus for production of backfill at rate of about 3,500 lb. per hr. with 100 lb. steam pressure; also new duplex piston pump for slurry service. Rep.: Lamar Roy, J. Thurman, S. Welch, G. Barrick, G. Wedereit.

Gower Mfg. Co., Greenville, S. C.—Booth 458.

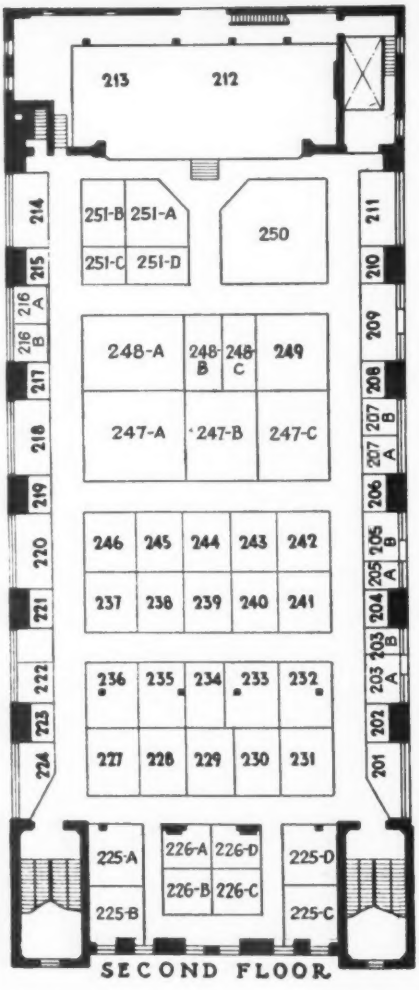
Greenville Textile Supply Co., Greenville, S. C.—Booth 212, 213. Features textile supplies from a number of companies including spools and bobbins, materials-handling equipment, switches and starter controls, lighting equipment, textile belting, power-transmission equipment, and textile motors. Rep.: W. T. McLeod, Karl A. Fisher, D. R. Dickson, Charles G. Price, Charles G. Hinkle, W. T. McLeod, Jr., D. C. Neese, G. H. Bartchlor, C. L. Jones, T. M. Bailey, W. L. Brigham, H. Z. Graham, C. Q. Mason.

Ira L. Griffin, Charlotte, N. C.—Booth 462B, 463. Starch products and warp-sizing specialties from the Hubinger Co. of Keokuk, Iowa, American Key Products, Inc. of New York, and American Gelatin Div. of General Foods, Woburn, Mass. Rep.: A. M. Robinson, H. R. Barnett, Ira L. Griffin.

Gulf Oil Corp., Pittsburgh, Pa.—Booth 211. Quality lubricants for textile industry, including Gulfgem for spindle lubrication and fiber-spray oils. Features Gulf engineering service. Rep.: A. O. Buntin, O. K. Weatherwax, H. N. Hill, John Houton, A. N. Wright, Roy Burkhalder, William Robinson.

William T. Harding Jr. Co., Charlotte, N. C.—See Johnson Corp.

Hart Products Corp., New York, N. Y.—Booth 237. Textile chemicals, featuring Caro-Gant cotton warp sizing. Rep.: Ralph Hart, S. H. Hart, C. C. Clark, Dr. B. G. Zimmerman.



Booths 201 to 251 on second floor

J. E. Hay Leather Co., Lowell, Mass.—See Carolina Belting Co.

Hayes Industries, Inc., Jackson, Mich.—Booth 350. Displays beams made of Lite Metal, including loom, section, and tricot beams. Rep.: G. B. Vass, Willian H. Maxson, D. C. Bender.

Hercules Powder Co., Wilmington, Del.—Booth 331, 332. Textile chemicals featuring a special pine oil and its many applications, as well as group of reagents. Representatives attending will be from Naval Stores Dept.

Herndon Machinery Co., Charlotte, N. C.—See Durant Mfg. Co.

Hollister-Moreland Co., Inc., Spartanburg, S. C.—Booth 227. Shows Merrow sewing machines for piece end-seaming with butt seam; also motor table and clutch for operating sewing machines; also cutting machines and supplies. Rep.: John Washburn, Everett Chamolin, Julian Frankel, Max Voigt, R. B. Moreland, O. S. Bachelor, J. B. Moreland, Lane C. Burris.

Hubbard Spool Co., Chicago, Ill.—Booth 226A. Shows spools, bobbins, tricot beams, sectional warper beams, stainless steel bobbins, metal-bound plywood loom-beam flanges, aluminum cloth rolls, etc. Featuring new aluminum hexagonal-type cloth roll, aluminum twister bobbins, and all-aluminum slasher beam. Rep.: E. J. Hubbard, Jr., F. A. Rappleyea, L. A. Hubbard, R. M. Stout.

Hubinger Co., Keokuk, Iowa—See Ira L. Griffin.

Hunt Machine Works, Inc., Greenville, S. C.—Booths 128, 129, 130. Textile machinery; including Hunt cotton looms, filament-rayon looms, spreaders, individual motor drives, belt-driven flywheel drives, size kettles, centrifugal and gear pumps, hydraulic presses, loom beams, etc. Some of this machinery will be demonstrated in operation particularly the Hunt HE filament-rayon loom with spreader and individual motor drive. Rep.: John O. Hunt, William E. Henderson, Emil V. Wilson, B. M. Cooper, Lee Martin, C. M. McClure, Jr., A. M. McNeill, I. R. Jermyn, W. R. Fox.

Huntington & Gerry, Inc., Greenville, S. C.—Booth 217. Features trouble-proof electrical installations for power and lighting in textile mills. Rep.: R. S. Huntington, DuPont Guerry, J. H. Howard, J. R. Rutledge, Glen Rice, Neal Campbell.

Hyster Co., Peoria, Ill.—Booth 491. Fork lift trucks, featuring a 2000-lb. capacity fork lift truck, a 2000-lb. capacity truck with Hyster Load Grab, and 4000-lb. fork truck. The Load Grab is an hydraulically operated clasping device for lifting bulky materials such as baled cotton which eliminates the use of pallets on such material. Rep.: C. H. Collier, Jr., D. F. Schultz, F. R. McMillan.

Ideal Machine Shops, Inc., Bessemer City, N. C.—Booths 325, 326. Features a new Ideal drawing with all rolls mounted on ball bearings and with meshing of flutes controlled by outer races of ball bearings. Other items shown include RCK treated flyers, rayon finished flyers, new RCK pressers, new and rebuilt roving spindles, Flow-Steel treated top rolls, and various rebuilding processes. Rep.: E. B. Robinson, Joe Whitehurst, Al S. Roebuck, E. F. Robinson.

Industrial Engineering Co., Kershaw, S. C.—Booth 311, 312. Self-lubricating bearings and filter materials of powdered metal, including bronze and iron; also self-lubricating bearings of impregnated wood. Reconditioned textile parts shown with above materials. Special features are Porex filters and Durex bearings. Rep.: D. H. Blakeney, C. R. Blakeney, R. H. Blakeney, F. L. Bowers, C. S. Smith.

Industrial Steels, Inc., Cambridge, Mass.—Booth 424. Stainless-steel products. Rep.: R. E. Mason, R. C. Cunningham.

International Business Machines Corp., New York—Booth 488. Shows IBM electric punched card accounting machines, time recording, signaling and indicating equipment, and IBM electric typewriters. Specially features the new time-system with electronic self-regulation. Rep.: G. W. Dick, T. A. Kirkland, C. E. McKittrick.

International Shoe Co., Hy-Test Div., Friedman & Shelby Branch, St. Louis, Mo.—Booth 316C. Hy-Test safety shoes.

Jenkins Bros., New York, N. Y.—Booth 440, 441. Valves, featuring new 200-lb. bronze gate valve and union bonnet with monel seat rings rolled in. Rep.: F. C. Barrett, W. A. Snellgrove, L. M. Leaptrott, E. L. Dean.

Johns-Manville Sales Corp., New York, N. Y.—Booth 465.

The Johnson Corp., Three Rivers, Mich.—Booth 461, 462A. Rotary pressure

joints, featuring the new Type-S self-supporting rotary joint and the new Speed-Heet, a multiple rotating syphon pipe-drainage system for 5- and 7-ft. cotton slashers. Rep.: R. O. Monroe, R. W. Gotschall, Wm. T. Harding, Jr., R. S. Hudgins, John Marshall, Allan T. Shepherd, Allan T. Shepherd, Jr., T. H. Abbey, T. H. Abbey, Jr., B. H. Leinart.

Johnson Engineering & Mfg. Co., Wilkes-Barre, Pa.—Booth 216. Self-stacking boards for handling bobbins, cones, tubes, quills, etc., made in all-stainless steel and cadmium-plated steel; yarn-handling trucks. Rep.: George McGee, H. B. Ahlberg.

Kanoy & Sons Machine Co., Inc., Charlotte, N. C.—Booth 226D. Precision-built machines and parts. Rep.: D. B. Kanoy, Jr., M. E. Carnes.

Kearny Mfg. Co., Kearny, N. J.—Booths 480, 484. Hygrolit yarn-conditioning machines and chemicals; Surco treating method for winders, beams, and finishing machinery; and moisture testers. New items include Surco treating method to condition yarn on the machine and a midget psychrometer. Rep.: C. F. Dulkin, George Westwater, C. C. Withington, Dr. Karl Heyman.

Keever Starch Co., Columbus, Ohio—Booth 407. Reception space, featuring samples of Victor mill starch displaying all fluidities. Rep.: James F. Kurtz, Charles C. Switzer, L. J. Castile, F. M. Wallace, E. Hays Reynolds.

Keystone Lubricating Co., Philadelphia, Pa.—Booth 403. Specialized lubricants for textile machinery, featuring demonstrations of heat, acid, and moisture repellence. Rep.: Vic Berguson, R. J. McGee, R. M. Goss, Albert Hobbie.

Walter Kidde & Co., Inc., Belleville, N. J.—Booth 242. Textile equipment and accessories, including the Kidde tension and density control for yarn-winding, the Tensometer, and the tension compensator. Rep.: E. J. Heiser, J. S. Gosnell, David Kroll, C. L. Griffin.

Lambeth Rope Corp., Greenville, S. C.—Booth 222B. Narrow fabrics, canvas loom supplies; miscellaneous items. Rep.: J. P. O'Leary and F. Burke.

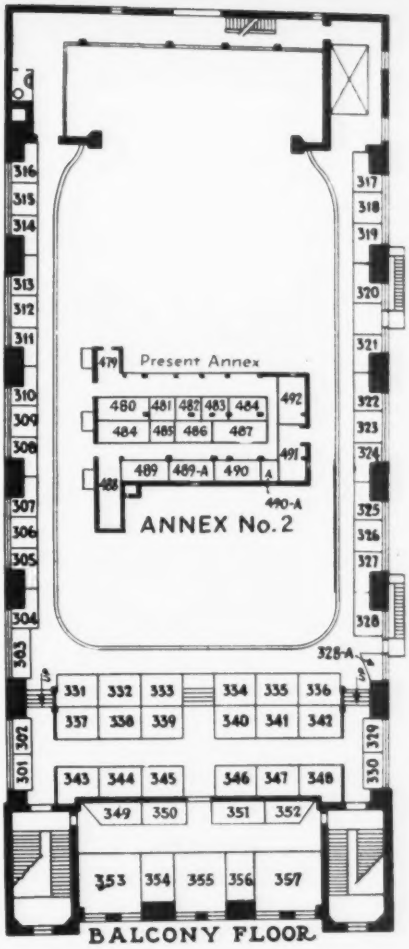
Oliver D. Landis, Inc., Charlotte, N. C.—Booth 460. Features Chatham slasher cloth, Keller pneumatic tools, William Kenyon spinning and twister tape; domestic, English, and French imported check straps. Rep.: Charles R. Ibach, Oliver D. Landis, Frank W. Eller, Winifred Goff.

LaSalle Steel Co., Chicago, Ill.—Booth 251B. Featuring Stressproof steel produced by special process said to combine in one bar high strength, free machinability, minimum warpage, and excellent wearability. Rep.: A. F. Golick, E. A. Hoffman, M. N. Bankard, F. D. Barringer.

S. C. Lawler Co., Chicago, Ill.—See Selig Co.

Leinart Engineering Co., Knoxville, Tenn.—See Johnson Corp.

Leslie Co., Lyndhurst, N. J.—Booth 333. Reducing valves, pump governors, temperature regulators, pressure controllers, and strainers. Rep.: J. T. Muller, R. W. Boettiger, Frank A. Thomas, Jr., R. K. Rouse, Welby Rose, S. E. Abernathy, F. W. Scott, Wm. Gauggell.



Booths 301 to 357 on balcony floor; Booths 479 to 492 in annex No. 2

Lestershire Spool & Mfg. Co., Johnson City, N. Y.—Booth 212, 213. New line of aluminum twister and spinner bobbins and jack spools; also other latest-type textile-mill bobbins. Rep.: Messrs. Dixon, Bailey, Graham, Brigham. See also Greenville Textile Supply Co.

Lincoln Engineering Co., St. Louis, Mo.—Booth 243. Lubrication equipment, including heavy-duty drum pumps, high-pressure and volume bucket pumps, Kleenseal hand guns, Kleenseal and Buttonhead grease fittings, high-pressure and volume grease hose, and airline accessories. Features centralized lubrication system in operation. Rep.: A. P. Fox, Foster Holmes, T. V. Picraux, Al Woodland, A. Laspe, R. Gabrielson, B. S. Davis.

Link-Belt Co., Chicago—Booth 219, 220, 221. Power-transmission equipment, consisting mainly of electrofluid drive, the P.I.V. speed changer, silent-chain drives, roller-chain drives, flexible couplings, etc. Shows various transmission units with transparent plastic covers so that observers may see details of operation. Booth will be serviced by Link-Belt sales engineers.

Louis-Allis Co., Milwaukee, Wis.—See Greenville Textile Supply Co.

Macbeth Corp., New York, N. Y.—Booth 145B. Shows color-matching skylights and pH meters, especially Model A for industrial use. Features new Macbeth Examolite for examination lighting. Rep.: Norman Macbeth.

Marchant Calculating Machine Co., Atlanta, Ga.—Booth 338, 339. Shows fully automatic silent speed calculator with full automatic multiplication and division, said to operate at speed of 1,300 counts per min. Rep.: John S. Bradbury, Julian O. Grubbs, R. C. Windsor, A. T. Davis.

Markem Machine Co., Keene, N. H.—Booths 232, 233A. Industrial marking machines and supplies in five models designed for the textile industry. These are KD machine; tag machine; Model 10A fabric-marking machine; Model 126 label machine; and Model 12A for cone stickers. Last named is a new piece of equipment and Models 10A and 126 have been newly redesigned. Rep.: Charles H. Cheeseman, C. A. Putnam, D. F. Putnam, H. D. Milton.

Marshall & Williams Corp., Providence, R. I.—Booth 137, 138A. Tentering equipment, featuring new high-speed tenter frame and new roller-type tenter clip. Rep.: Richmond Viall, John C. Nash, Fred H. Land.

Meadows Mfg. Co., Atlanta, Ga.—Booth 247B. Spinning frame parts, displaying especially short spinning frame converted from band to tape drive with use of individual driving pulleys replacing cylinder. Rep.: E. D. Meadows, James P. Coleman, R. L. Holloway, Walter S. Coleman, J. R. Caldwell, R. B. Rowe.

Mechanical Equipment Co., Charlotte, N. C.—Booth 134A, 135.

Merrow Machine Co., Hartford, Conn.—See Hollister-Moreland Co.

Metal-Glass Products Co., Belding, Mich.—Booth 225B. Slashing equipment, including slasher boxes and cans and size pumps, storage tanks, and coolers. Specially featured is use of high-pressure stainless-steel and steam-jacketed equipment. Rep.: W. M. Curry, J. B. Curry, J. D. Allen, N. P. Foley.

Miller Co., Meriden, Conn.—Booth 423. Continuous-wireway fluorescent-lighting system, featuring fittings for simplified installation. Rep.: C. Booker, H. Phillips, J. J. Perry, Jr., G. W. Beals, A. T. Bergeron.

Moffatt Bearings Co., Philadelphia—Booth 237. Antifriction bearings including ball, thrust, roller, needle, etc., as well as oil seals and locking rings. Specially featured are Sealmaster self-aligning ball-bearing pillow blocks and spherical roller bearings with bronze retainers. Rep.: O. S. Livingston, D. G. Hornbaker, R. W. Vogelsberg, R. L. White, S. D. Zeanah, Albert Q. Davis, I. R. Milford.

Monroe Calculating Machine Co., Inc., Orange, N. J.—Booth 334, 335, 336. Adding, calculating, and bookkeeping machines featuring latest types. New items include fully automatic calculating machines and an improved model of adding-listing machine. Rep.: B. T. Burry, Hugh Price, E. S. Cabaniss, F. M. Smith, Jr., T. G. Bloxham, J. C. Moody, W. G. Taliaferro, W. J. Beavers.

Monroe Co., Cleveland, Ohio—Booth 349. Plant maintenance materials including flooring, waterproofing materials, and paints. Features sections of flooring showing application of resurfacers particularly adapted to textile mills. Rep.: Paul Dudash, C. J. McCormack.

Montgomery & Crawford, Inc., Spartanburg, S. C.—Booth 477. Reception space. Rep.: Joe Crawford, Alec Gainer, Frank Fielder, Sam Means,

P. W. Moore, "Bus" Walker, Ted Crain, Charley Dunn.

Morehead Mfg. Co., Detroit, Mich.—Booth 353. Tilting-type return trap. Rep.: Alton M. Bryan, J. B. Phillips.

Morse Chain Co., Detroit, Mich.—Booth 489. Drives and clutches, including silent chains, roller chains, flexible couplings, friction clutches, and overrunning clutches. Featuring new standard silent chains and sprockets, Morse-Rockford small-diameter friction clutches, Morse-Formsprag overrunning clutches shown in various operating exhibits. Rep.: F. M. Hawley, R. J. Howison, D. C. McNeely, H. R. Greenley, I. A. Horton.

Mount Hope Machinery Co., Taunton, Mass.—Booth 141. Cloth-handling machines and devices, including guiding and feeding equipment for open-width fabrics, equipment for automatic opening of cloth from rope form, free-wheeling expanders, and filling straighteners. Rep.: J. D. Robertson, J. B. Hammett, E. F. Slaughter, J. F. Slaughter, S. Wilson, S. Springer.

Myles Salt Co., Inc., Charlotte, N. C.—Booth 485. Features latest improved method of dissolving rock salt and purifying brine in one operation. Rep.: John M. Culp, Jr., James B. Hunter, Jr., C. J. Nadherny, E. R. Ravenel, M. J. Reach, S. C. Kendrick, John Calvin Drake.

National Cash Register Co., Dayton, Ohio—Booth 354, 355, 356. Payroll-and-distribution and factory-accounting machines. The payroll machine is adapted for complete records and is shown with several models of Allen-Wales all-purpose figuring machines. This company has never before exhibited at a Southern textile show. Rep.: G. S. Copenhaver, J. E. McDade, R. G. Briegel, C. J. Wilson, A. C. Knoebber.

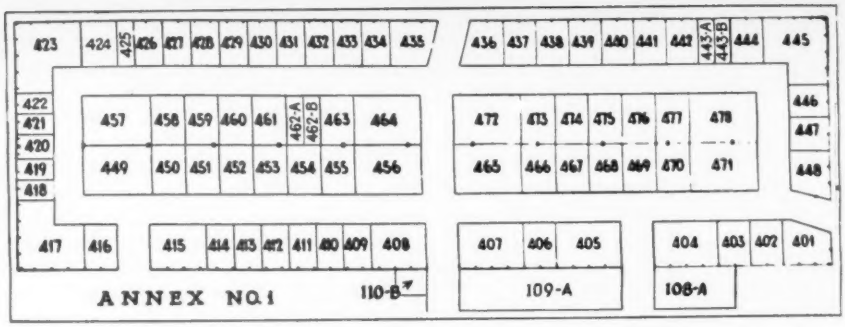
National Plastics, Inc., Knoxville, Tenn.—Booth 401. Line of Runrite plastic sheaves; also tape-tension idler and other textile machinery parts of plastic. Rep.: C. Van Deventer, III, C. R. Overholser, R. R. Spencer.

National Plastics Products Co., Odenton, Md.—Booth 248C, 249. Display of saran filament as commercially spooled for textile industry; also fabrics woven of saran and items fabricated from the woven material. Rep.: E. Winer, F. V. Ulrich, H. D. Dawbarn, H. W. Rydstrom, Jr., D. Magee, C. Worthington, F. Brown, G. J. Treuting, J. Richards.

National Ring Traveler Co., Pawtucket, R. I.—Booth 214. Spinning and twisting travelers of every description. Rep.: P. C. Wentworth and full Southern selling force.

National Starch Products, Inc., New York—Booth 443, 443A. Features flow chart on how corn starch is made. Rep.: F. Greenwall, L. E. Klempner, W. M. Bonner, H. C. Olsen, J. F. Fitzgerald.

New Departure (Div. General Motors Corp.), Bristol, Conn.—Booth 472, 473. Features injection relubrication feature of firm's ball bearings. Shows working model of loom treadle, tension pulley, top roll, spindle, and other machine parts equipped with ball bearings; also bearings used in mechanized cultivation and harvesting of cotton; also New Departure's bouncing-ball machine to dramatize quality and uniformity of company's product. Rep.: W. T. Murden, A. A. Gloetzner, J. Y. Pharr, Jr., A. E. Bishop, R. D. Brouwer, F. W. Marschner, F. W. Miller, R. O. Wirtemburg, M. T. Monich, C. B. Beckwith, S. H. Stoner.



Booths 401 to 478 in annex No. 1; also 108A, 109A, 110B.

New York & New Jersey Lubricant Co., New York—Booth 109. Grades of non-fluid oil for textile-mill lubrication will be displayed and demonstrated. Rep.: F. L. Thomason, W. C. Taylor, F. W. Phillips, F. D. Jacoway, J. A. Sorrells, Jr., J. M. McNeely, Jr.

Nutting Truck & Caster Co., Faribault, Minn.—Booth 402.

Oakite Products, Inc., New York—Booth 329. Specialized cleaning compounds, featuring time-savings in maintenance cleaning and related tasks through use of Oakite compounds and methods. At booth will be field service men and main-office technical specialists.

Odell Mill Supply Co., Greensboro, N. C.—See Greenville Textile Supply Co.

Odom Machine Mfg. Co., Roswell, Ga.—Booth 316B. Oilless ball-bearing comb box. Rep.: M. W. Odom.

Pabst Sales Co., Chicago—Booth 328. Features Exsize, the firm's standard desizer. Rep.: C. H. Patrick, G. B. Perlstein.

J. C. Paddock Co., Spartanburg, S. C.—See Greenville Textile Supply Co.

Parks & Woolson Machine Co., Springfield, Vt.—Booth 324. Wool processing machinery. Reception space only, no machines shown. Rep.: S. W. Hall, R. F. Hadley.

Penick & Ford, Ltd., Inc., Cedar Rapids, Iowa—Booth 437, 438. Starches, dextrines, gums, and sugars, featuring their applications in the textile industry. Rep.: D. P. O'Connor, H. A. Horan, O. R. Steffens, P. G. Wear, C. T. Lassiter, T. H. Nelson, G. L. Morrison, L. C. Harmon, Jr., W. J. Kirby, J. H. Almand, G. M. Anderson, D. Lowry.

E. W. Pike & Co., Elizabeth, N. J.—Booth 344. Magnifying glasses for textile inspection with counting plates and illumination, featuring those from 5 to 40 power. Rep.: Mrs. S. N. Pike, Mrs. Gertrude Boroff.

Pittsburgh-Corning Corp., Pittsburgh, Pa.—Booth 201. Building products, featuring PC glass blocks and PC Foamglas insulation and including new PC Soft-Lite prism B, glass block, a light-directing block for sunlit exposures. Emphasizes better daylighting, lower maintenance cost, better temperature and humidity control. Rep.: H. R. Haynes, Dr. A. H. Baker, R. F. Quinn, A. I. Holmes.

Pittsburgh Plate Glass Co., Greenville, S. C.—Booth 303. Paints and "Color Dynamics" painting system; also paint brushes and glass items including Twindow. Rep.: Doug Hendricks, H. B. Nutting, F. H. Carter, Clemson Riddle.

Plasticbilt Corp., Greenville, S. C.—Booth 103A. Rep.: R. L. Carroll.

Plibrico Jointless Firebrick Co., Chicago—Booth 106. Refractory products, featuring adaptability of monolithic Plibrico furnace construction for all types of boilers particularly sectionally supported, air-cooled walls and suspended arches. Rep.: O. L. Ballard, M. C. Ballard, F. S. Rieder.

Pneumafil Corp., Charlotte, N. C.—Booth 404. System for control of broken ends and collection of waste. No equipment shown but demonstration through pictures. Rep.: C. R. Harris, G. E. Archer, J. W. Stuart.

Poe Hardware & Supply Co., Greenville, S. C.—Booth 225.

Precision Gear & Machine Co., Charlotte, N. C.—Booth 486. Chain drives, gears, ball bearings, and compound bobbin lifters. Rep.: H. Frohman, V. A. Hanson, D. A. Chapman, C. S. Seabrook.

Provident Life & Accident Insurance Co., Chattanooga, Tenn.—Booth 317, 318, 319. Features employee-welfare programs. Rep.: E. W. Morrison, A. Gordon, C. DuPree.

Punch-Lok Co., Chicago, Ill.—See Carolina Belting Co.

Pure Oil Corp., Charlotte, N. C.—Booth 248B. Oils and lubricants. Rep.: J. G. Baldin, F. G. Sholes, R. G. Whitted.

Puritan Chemical Co., Atlanta, Ga.—Booth 414. Floor seals, floor maintenance materials, disinfectants, and cleaning supplies; features new streamlined Auto-scrubber. Rep.: Edwin P. Collins, Roy Martin, F. E. Baldwin, Ross M. Goddard, W. A. Williams, F. W. McComb, Jr., Ted V. Fisher, A. L. Feldman.

Ragan Ring Co., Atlanta, Ga.—Booth 101. Spinning rings. Rep.: Ralph Ragan, J. H. Foard.

Russell Ranson, Charlotte, N. C.—See Weston Electrical Instrument Co.

Rayon Textile Monthly, New York, N. Y.—Booth 313. Textile publishers.

Reeves Pulley Co., Columbus, Ind.—Booth 247C. Variable-speed-control equipment. Displays variable-speed transmission, variable-speed motor pulley, Vari-Speed Motodrive with mechanical, electrical, and automatic controls. New is Reeves slasher main drive with single compact unit which gives all necessary speeds from creep to full running rate controlled from push-button stations. Rep.: C. L. Ir-

win, F. M. Higgins, M. R. Snyder, J. W. Vaughan, Jr., P. C. Talbot, D. C. Clem, W. J. Reeves, J. B. Thomas, J. Reeder.

Reynolds Metals Co., Louisville, Ky.—Booth 233B, 234. Aluminum developments for use on textile machinery with display of various fabricated assemblies, extrusions, etc., made by customers of Reynolds Metals in cooperation with Reynolds engineers. Rep.: H. V. Menking, G. L. Root, R. B. Clapper, David F. Beard, Ray Christensen, C. L. Thompson, Fred L. Boynton, G. B. Bailey, H. E. Jennings.

J. E. Rhoads & Sons, Philadelphia, Pa.—Booth 131, 132. Leather products and accessories, including Gripotan and Gilt-Edge flat leather belts, textile straps, tannate liquid belt preserver, waterproof cement. Features Tannate flat leather belt, Tannate-Rockwood spinning-frame drive, and new double-reduction flat-belt loom drive. Rep.: J. Edgar Rhoads, R. H. Rhoads, S. L. Allen, C. R. Mitchell, C. H. Tildes, A. S. Jay, J. T. Hoffman, J. W. Mitchell, L. H. Schwoebel.

Ridge Tool Co., Elyria, Ohio—Booth 470, 471. Complete line of pipe tools. Rep.: R. D. Fye, W. L. Parcell, M. Fired.

B. S. Roy & Son Co., Greenville, S. C.—Booth 207. Rep.: Jack Roy.

Russell Mfg. Co., Middletown, Conn.—Booth 246. Transmission and conveyor belting, harness and loom straps, cone belts. Rep.: P. F. Madsen, Earle Sargent, Bruck Williams, John Williams. See also Carolina Belting Co.

Sarco Co., Inc., New York, N. Y.—Booth 427, 428. Steam traps, temperature regulators, mixing valves, strainers, and heating specialties. Features new draining system for slashers, dry cans, and similar rotating cylinders; also new method of temperature control for dye jigs and similar equipment. Rep.: Albert Milnes, R. H. Johnson, E. Greene, M. J. Marion.

Selig Co., Atlanta, Ga.—Booth 308, 309, 310. Floor maintenance equipment and complete sanitary maintenance material. Rep.: Simon S. Selig, Jr., V. P. William, F. Bode, Charles Pearl, Lee L. Strasburger, Samson Weiss, Alvin Schwab, Arthur P. Boller.

Seydel-Woolley & Co., Atlanta, Ga.—Booth 230, 231. Niagara twist-setter yarn-conditioning machine and Seyco penetrants for yarn conditioning. Rep.: Vasser Woolley, Paul V. Seydel, John R. Seydel, W. L. Whisnant, E. A. Scott, A. W. LaGrone.

Shook Bronze Corp., Lima, Ohio—Booth 251D. Bronze bearings, bushings, bar stock, bearing alloys, production parts, and maintenance supplies. Features application of bronze bushings in the textile field. Rep.: Alan Dale, John Gafney, George Zapp.

Sims Co., Erie, Pa.—Booth 134A, 135. Heat exchangers and water heaters for textile use. Rep.: E. G. Sims, Wm. T. Harding, Jr. See also Mechanical Equipment Co. and Clark Mfg. Co.

Allen T. Shepherd Co., Richmond, Va.—See Johnson Corp.

Sinclair Refining Co., Atlanta, Ga.—Booth 103. Petroleum products, featuring a new and improved spindle oil. Rep.: F. W. Schwettmann, P. W. Godard, G. R. Dyer, W. P. Camp, J. O. Holt, L. M. Kay, W. H. Lipscomb, R. O. Miller, C. C. Nix, R. L. Parrish, R. A. Smith, E. D. Watson.

J. E. Sirrine Co., Greenville, S. C.—Booth 203. Consulting and designing engineers. Reception space. Rep.: A. D. Ashbury and members of textile department.

SKF Industries, Inc., Philadelphia, Pa.—Booth 409, 410, 411. Anti-friction bearing equipment, featuring new aluminum tape-tension pulley and complete line of pillow blocks and spindle bolsters. Displays also section of spinning frame with 16 spindles equipped with the bolsters and pulleys. Pillow blocks incorporate labyrinth instead of felt seals. Rep.: R. H. DeMott, R. R. Zisette, R. C. Byler, A. S. Murray, B. K. Lathbury, D. W. McAllen, H. A. Fonda, M. H. Courtney, R. W. Franklin, V. W. Cook, B. F. Davis, G. E. Allen, G. M. Boullion.

Slaughter Machinery Co., Charlotte, N. C.—See Venango Engineering Co.

Smith Bros., Gastonia, N. C.—Booth 226C. Textile machinery parts including gears, studs, bearings, lifting rods, lifting rod bushings, ring holders, bolsters, new-type lifting bushings, new-type cylinder head, new oiling system on lifting rods, late-model reconditioned shop equipment, fluorescent lighting fixtures. Rep.: Guy L. Smith, Fred H. Smith, L. P. Smith, Floyd Stilwell, Mr. Parker, Mr. Grice.

Smith, Drum & Co., Philadelphia, Pa.—Booth 113, 114, 115, 116, 117, 118, 119, 120, 121. Dyeing, extracting, and drying machines for hosiery, skeins, packages, and beams. Shows new pulsatory-type, skein-dyeing machine for heavy woolen and worsted yarns in skein form featuring low liquor ratio and reduced floor space. Also features rotary dyeing machine, combination beam, and package dyeing machine and skein-dyeing machine. Rep.: H. S. Drum, W. C. Dodson, J. M. Ballentine, P. M. Parrott.

Sonoco Products Co., Hartsville, S. C.—Booth 238. Shows complete line of paper carriers for textile industry, including cones, tubes, cores, spools, spinning bobbins; also cork and synthetic-rubber cots and other specialties. Rep.: C. H. Campbell, W. A. Biggs, W. B. Broadbent, W. M. Carpenter, John Coxe, P. F. Williams, G. K. Lewis, and other members of executive and sales staffs.

Southeastern Sound & Electronics Corp., Greenville, S. C.—Booth 348. Kellogg Selec-O-Phone telephone system, Operadio and Webster Teletalk intercommunication system, industrial music system, and office dictation equipment. Rep.: James C. Digh, Jr., Paul C. Gault, Miss Carol Hooper.

Southern Sizing Co., Altanta, Ga.—Booth 225-D, E. Balanced line of textile specialties including warp sizes, homogenized tallow, cotton softeners, sulphonated oils, sulphonated tallow, and water repellents. Features new-type warp lubricant, Slix, and warp-applicator unit. Products never before exhibited. Rep.: C. Russell Gill, Jimmie D. Walker, Robert V. May, Hill M. Hunter, Jr., Arthur G. Lehne.

Southern States Equipment Corp., Hampton, Ga.—Booth 241. Gears and replacement parts for textile machinery including ball-bearing comb box, comb-stock ball bearing and off-end stand. Also showing new inspection table. Rep.: C. W. Walter, F. J. Allen, W. A. Knapp, John Walters, R. W. Schrimshire, C. H. Kennington.

Southern Textile News, Charlotte, N. C.—Booth 304. Textile publishers.

Square D Co., Milwaukee, Wis.—Booth 459. Electric power and lighting distribution equipment and electric motor-control equipment. Included are safety switches, circuit breakers, busways and wireways, combination starters, shipper-rod control stations, loom switches, etc. Rep.: F. H. Roby, S. T. Walz, S. W. Hartness, J. D. Rambo, E. Love.

A. E. Staley Mfg. Co., Decatur, Ill.—Booth 415. Textile starches and special products for warp sizing of cotton, rayon, and synthetic yarns. Rep.: Paul D. Doolen, Ivan F. Wieland, Allen Fuller, W. H. Randolph, Jr., Walter P. Hope, L. A. Dillon, W. N. Dulaney, W. T. O'Steen, George A. Dean, H. A. Mitchell.

J. T. Stallings, Gastonia, N. C.—Booth 321.

Standard Pressed Steel Co., Jenkintown, Pa.—Booth 357. Unbrako square-head and socket-head knurled-point set screws, Flexloc self-locking nuts, Hallowell trucks, and spindles. Rep.: J. W. Friel, C. W. Hollingsworth, Jack Mahon, W. Allen, John J. Wiest.

Steel Heddle Mfg. Co., Philadelphia, and Southern Shuttles Div., Greenville, S. C.—Booth 136. Complete line of Ste-Hed-Co products including flat steel heddles and harness frames, dropwires, reeds, warp-preparation equipment, dogwood and persimmon shuttles of automatic and hand-threaded types. Features new Drawtex tempered-steel heddle and harness frame for use with new Barber-Colman drawing-in machine. Rep.: J. J. Kaufmann, R. J. Freitag, V. C. Hassold, F. H. Kaufmann, J. J. Kaufmann, Jr., S. Zimmerman, D. L. Batson, C. W. Cain, H. P. Goodwin, D. W. G. Macintyre, J. H. Armstrong.

Stein, Hall & Co., Inc., New York, N. Y.—Booth 468, 469. Sizing, finishing, and printing materials and packaging products. Exhibit stresses firm's worldwide connections. Rep.: Frank W. Perry, William N. Kline, Jr., Edward D. Estes, Dave E. Truax, Stanley S. Hockridge, Willard S. Gilbert.

Stewart-Warner Corp., Alemite Div., Chicago, Ill.—Booth 405. Lubricating systems and lubricants.

Sturtevant Div., Hyde Park, Mass.—See Westinghouse Electric Corp.

Sylvania Electric Corp., New York, N. Y.—Booth 490. Textile mill lighting by fluorescent or incandescent lamps, featuring colored fluorescent, especially Warmtone a new color which closely matches that of incandescent. Shows also fluorescent fixtures treated to withstand high-humidity conditions. Rep: Dallas Rand, Hugh Saussy, Roy Southworth.

W. O. & M. W. Talcott, Inc., Providence, R. I.—Booth 406. Belt fasteners for transmission belts featuring speed of application, long life, strength, and low cost. Rep.: M. W. Talcott.

Taylor-Colquitt Co., Spartanburg, S. C.—Booth 210. Creosoted and salt-treated materials. Rep.: M. P. Brown, Wilkins Cagle, Thos. A. Moore.

Taylor Instrument Cos., Rochester, N. Y.—Booth 432, 433, 434. Instruments, featuring display of slasher control panel for size preparation and yarn drying, control panel for package and beam dyeing, general industrial

thermometers, and electric level-control valves. Rep.: Frank S. Ward, Harry G. Olsen, John Barber, George E. Howard, Howard M. Barker, Jack Barker, Warren C. Gray, H. M. Messenger.

L. S. Teague Equipment Co., Jacksonville, Fla.—See Hyster Co.

G. H. Tennant Co., Minneapolis, Minn.—Booth 125, 126. Floor machines, edgers, and magnets; floor waxes, seals, and polishes. Displays revolving-drum-type machine floor edger to reach areas under looms, hand-operated floor magnets for picking up travelers, knitting needles, etc.; also line of floor treatments. Rep.: Orville C. Hognander, Robert F. Guthrie, Walter Boyer, George D. Billings, John F. Thorsen, Frank D. Lilly, Fremont B. Gruss, Raymond B. Volkmann, H. E. Lavett.

Texas Co., Atlanta, Ga.—Booth 430, 431. Texaco lubricating oils and greases. Rep.: J. H. Moran, D. C. Rand, J. S. Leonard, L. C. Mitchum, S. F. Walker, F. G. Mitchell. J. W. Motley, Jr., A. C. Evans, J. E. Sammons.

Textile Age, New York, N. Y.—Booth 490A. Textile publishers.

Textile Bulletin, Charlotte, N. C.—Booth 204. Textile publishers.

Textile Industries, Atlanta, Ga.—Booth 408. Textile publishers.

Textile World, New York. N. Y.—Booth 223, 224. Textile publishers.

Tidewater Associated Oil Co., New York, N. Y.—Booth 145A. Tydol industrial oils and greases featuring specialties for textile industry. Rep.: H. G. Mullen, W. B. Joachim, K. M. Slocum, A. R. Senftleben.

Toledo Scale Co., Toledo, Ohio.—Booth 449. Automatic indicating scales for weight control in textile mills including portable, bench, and floor scales; cotton lap scales; weight-printing scales. Features accuracy, speed, dependability, and broad selection to cover all requirements. Rep.: W. M. Randolph, W. F. MacKinnon, R. L. Schick.

Tolhurst Centrifugals Div., American Machine & Metals, Inc., East Moline, Ill.—Booth 144. Hydro-extracting equipment, showing large Suprex extractor and Minute-Man extractor. Rep.: F. C. Weicker, A. R. Angel, R. M. Hammes.

Trabon Engineering Corp., Cleveland, Ohio.—Booth 476. Centralized lubricating systems manually, mechanically, or electrically driven. Features small automatic mechanical or motor-driven systems, including Trabon MP pumping unit and 3400 pumping unit in operation; also hose, tubing, connections, and accessories. Rep.: F. D. Johnson, Wilbur Deutsch, Eugene Bartko, J. T. Potter, D. A. Smith, J. W. Eshelman, C. M. Ellis, G. S. Myers.

Tubular Micrometer Co., St. James, Minn.—Booth 215. Precision measuring instruments including micrometers, calipers, gages, and dial indicator adaptations, featuring specialties for textile use. New items include heavy-duty crankshaft, and sapphire-tipped micrometers. Rep.: H. M. James, R. L. Johnson, F. D. Barringer.

U. S. Gutta Percha Paint Co., Providence, R. I.—Booth 222A. Barreled Sunlight paint products, white and colors for exterior and interior; stresses full line for floors, walls, machinery, piping, "colorcoding," etc. Rep.: Howard F. Eastwood, C. L. Park, William M. Moore, L. K. Palmer, T. C. Roggenkamp, P. R. Singletary.

U. S. Ring Traveler Co., Providence, R. I.—Booth 452. Travelers of all descriptions. Rep.: W. P. Vaughan, W. H. Rose, H. R. Fisher, O. B. Land.

Uster Corp., Charlotte, N. C.—Booth 404. Machines and apparatus made by Zellweger, Ltd., of Uster, Switzerland, including Little Uster warp tying-in machine, Turicum reaching-in machine, denting machine, yarn evenness tester, and thread tension gage. Items have not been publicly shown before in this country. Rep.: C. R. Harris, A. Schuler, G. E. Archer, J. W. Stuart. See Pneumafil Corp.

Veeder-Root, Inc., Hartford, Conn.—Booth 107. Electrically, mechanically, and manually operated counters for the textile industry, including pick, hank, yardage, revolution, and measurement. Rep.: G. H. Anthony, H. V. Barker, R. C. Conant, A. E. Kallinich, G. L. Logan, H. L. Spaunburg, F. J. Swords.

Venango Engineering Co., Inc., Philadelphia, Pa.—Booth 133. Textile dyeing equipment. Rep.: C. Harry McCandless, Edwin F. Slaughter, J. Fred Slaughter.

Victor Ring Traveler Co., Providence, R. I.—Booth 251A. Travelers of all descriptions. Reception space only at booth. Rep.: E. R. Jerome, W. L. Hudson, J. K. Davis, C. W. Wilbanks, Wm. T. Horton, F. P. Bodenheimer.

Walker Mfg. Co., Philadelphia, Pa. See Greenville Textile Supply Co.

Warwick Chemical Co., Long Island City, N. Y.—Booth 346, 347. Textile finishes, including Norane, durable water repellent, and Impregnole, renewable water repellent. Rep.: W. E. Murray, Henry Papini, M. M. McCann, Wm. Searcy, I. S. Hurd.

Watson & Desmond, Charlotte, N. C.—See Watson-Williams Mfg. Co.

Watson-Williams Mfg. Co., Millbury, Mass.—Booth 127. Shuttles, featuring silk and rayon shuttle with S7X eye for reverse wind and S7 eye for regular wind especially for S5 and S6 looms; quick interchangeability of regular and tension eyes; locking tip sleeve which anchors shuttle tip to block for life of shuttle; CI-41 shuttle eye with inner hook and outer lock for quick threading and security. Rep.: Hubert J. Watson, Wilbur Watson, Donald R. Scott, Charles A. Dodge, Harold E. Goff, Clifton E. Watson, S. P. V. Desmond, R. V. McPhail, Walter F. Daboll, John W. Littlefield.

Waukesha Foundry Co., Waukesha, Wis.—Booth 235. Ball-bearing pumps for liquid handling (especially sizing in slasher rooms); also Waukesha Metal (nickel alloy), stainless steel, aluminum, brass, bronze castings. Rotary pump handling size without foaming will be demonstrated. Not previously shown at textile exhibition. Rep.: Emil Howe, Chas. E. Schick.

Westinghouse Electric Corp., Pittsburgh, Pa.—Booth 417, 418, 419. Motors, lighting, and accessories. Features lint-free motor, totally enclosed loom motor, and model of multi-motor slasher drive with Rototrol rotating tension control which eliminates lineshafts, gearing, core-pulleys, belts, and slip clutches. Also included are textile-type gearmotor, model control center, industrial lighting equipment, starters, circuit-breakers, and an electronic warper drive.

Westinghouse Electric Corp., Sturtevant Div., Hyde Park, Boston, Mass.—Booth 450, 451. Air handling, conditioning, and cleaning. Features Precipitron air-cleaner, 100-ton CLS hermetically sealed compressor, slasher Axiflo fan, and textile Speedheater. Rep.: J. C. Thompson, A. J. Bronold, W. A. Wason, W. L. Hunken, R. C. Black, T. M. Curtin, J. E. Justice.

Weston Electrical Instrument Corp., Newark, N. J.—Booth 482. Industrial thermometers, humidity indicator, electrical measuring instruments, and test equipment. Features new speed-ratio tachometer to measure percent stretch of yarn during slashing, per cent shrink of fabrics in processing, per cent speed ratio of machines operating in series in a finishing range. Rep.: R. T. Pierce, Russell Ranson.

Wheeler Reflector Co., Boston, Mass.—Rep.: L. W. Ferguson, M. L. Whitman, G. H. Preacher. See Greenville Textile Supply Co.

Whitinsville Spinning Ring Co., Whitinsville, Mass.—Booth 202. Spinning and twisting rings and accessories, featuring the company's 75th anniversary. Rep.: William P. Dutemple, G. Trowbridge Brown, William K. Shirley.

Whiting Engineering & Mfg. Co., Hartsville, S. C.—Booth 317B. Rep.: W. S. Whiting, Jr.

Worthington Pump & Machine Corp., Harrison, N. J.—Booth 143. Features air-conditioning unit, centrifugal refrigeration compressor, air compressor, centrifugal pumps, variable-speed drive, and V-belt drive. Rep.: W. J. Van Vleck, R. L. Cash, E. Michel, P. Shaw.

Wrenn Bros., Charlotte, N. C.—Booth 475. Shows industrial casters, wheel conveyors, metal and fiber trucks, and industrial trucks. New items include Swartzbaugh drink truck and a load dispatcher. Rep. J. Preston Wrenn and Ernest Ahlquist.

Yale & Towne Mfg. Co., Philadelphia, Pa.—Booth 131A. Materials-handling equipment, featuring KM30 high-lift, tilting fork truck, portable platform scales, Cable King, Midget King, and Load King electric hoists, hanging lap pan dial mechanism and hand hoists. Featured items are new Worksaver high-lift telescopic fork truck and Easy Lift model hand truck. Rep.: J. S. McCullough, W. J. McGreevy, Geo. Sherrill, S. P. Boyd, R. E. Mason, R. S. Kerr, A. F. Shenk.

York Corp., York, Pa.—Booth 109A. Mechanical cooling apparatus, featuring water-chilling equipment for air-conditioning, stressing use of centrifugal compressor up to 1,600 tons of refrigeration; also Flak ice machine producing ribbons of ice, and automatic ice-cube maker, both for use in cafeterias, restaurants, etc. Rep.: J. R. Hertzler, F. C. Wood, M. M. Crout, R. C. Barnes, R. A. Chandler, M. P. Echols, E. C. Harper, O. W. Hogan, Jr., Walter May, J. C. Malone, D. P. Schiwetz, Ned C. Scott, R. A. Warnock, Leon E. Kinley.

We'll see you at the SOUTHERN TEXTILE SHOW

• BOOTH 487

HERE'S where we can prove to each other that "seeing is believing". For the first time since the shooting war, we can get together and mix renewing of old friendships with a little business. We'll have on the floor, the complete line of Eriez Non-Electric Permanent Magnets. You can feel the magnetic pull of the Eriez Hump, Spiked Apron Magnet and Pulley . . . You'll see the Bantam, Standard, Jumbo, Giant, Model X style plates and Magnetic Trap . . . and we'll explain how Eriez engineering has resulted in solving many textile separation problems. You'll see a quick and effective solution to some separation problem that's bothering you now or may present itself at some future time. Most likely many of your old friends in the industry will be at the show. Among them you're sure to find a number of Eriez users. Their experience in permitting Eriez engineers to work with them in the application of the correct Eriez Magnetic Separator for the job will be valuable to each of us.

See you at the Show, Booth 487

See how you can
STOP TRAMP IRON
in Processing . . .

COTTON • WOOL
RAYON • SILK
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MOSS • SHODDY
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Booth 487 at the Show in Greenville, S. C.

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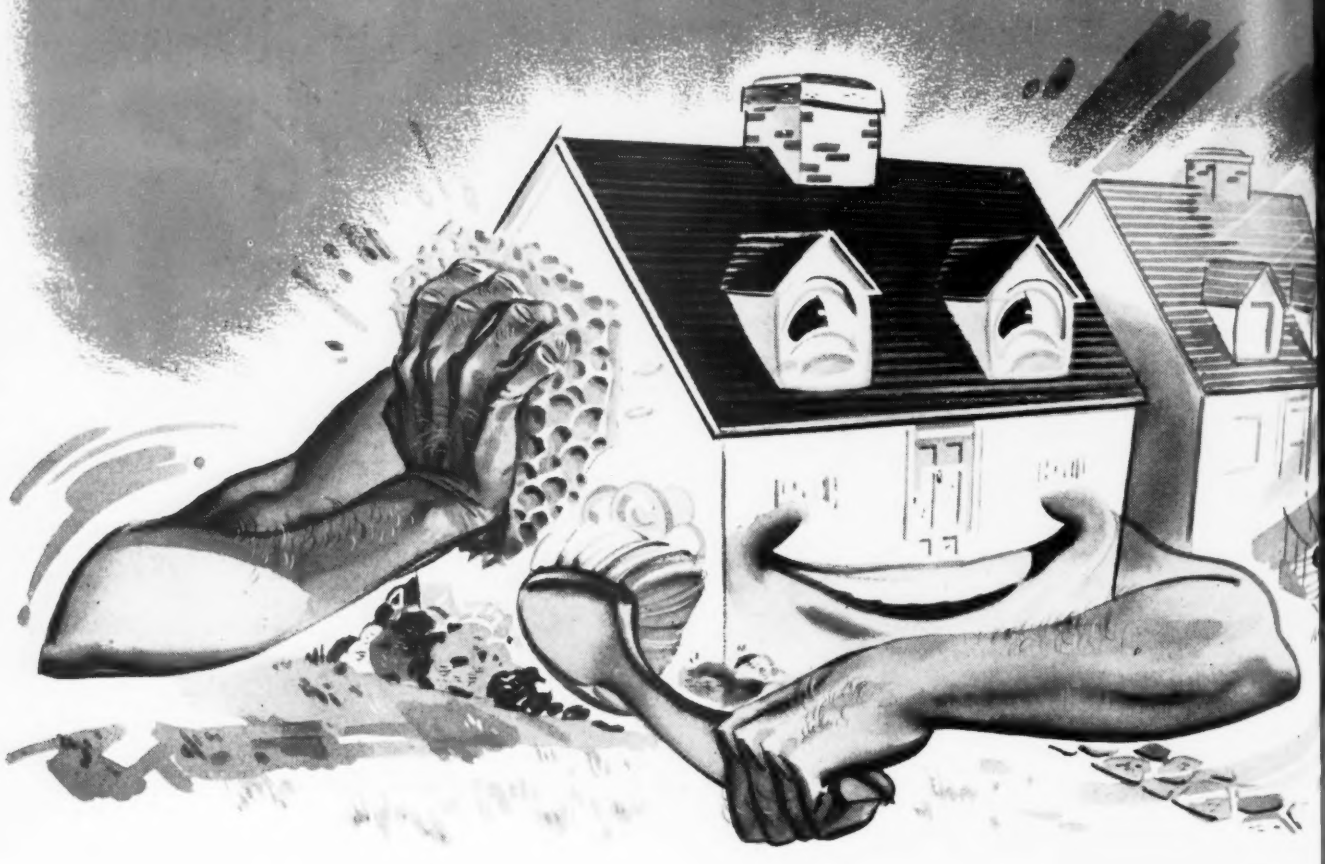
It Protects while it Beautifies

BARRELED SUNLIGHT

Self Cleaning OUTSIDE WHITE



Out of the market when top grade raw materials weren't available but NEVER *out of buyers' minds*, Outside Barreled Sunlight is back—better than ever! We've made its meld even better. It flows even easier. We've added to its hiding power which was already the talk of the trade!

Best of all we've made Barreled Sunlight Self Cleaning Outside White even whiter, extra brilliant. And furthermore, this higher quality paint grows whiter and brighter with the years. A "controlled chalking" process acts as a self cleaner by "liquidating" dirt and dust in the course of weathering. And when repainting eventually is needed, controlled chalking assures a clean, smooth, even surface that can be quickly and easily repainted without costly preparations.

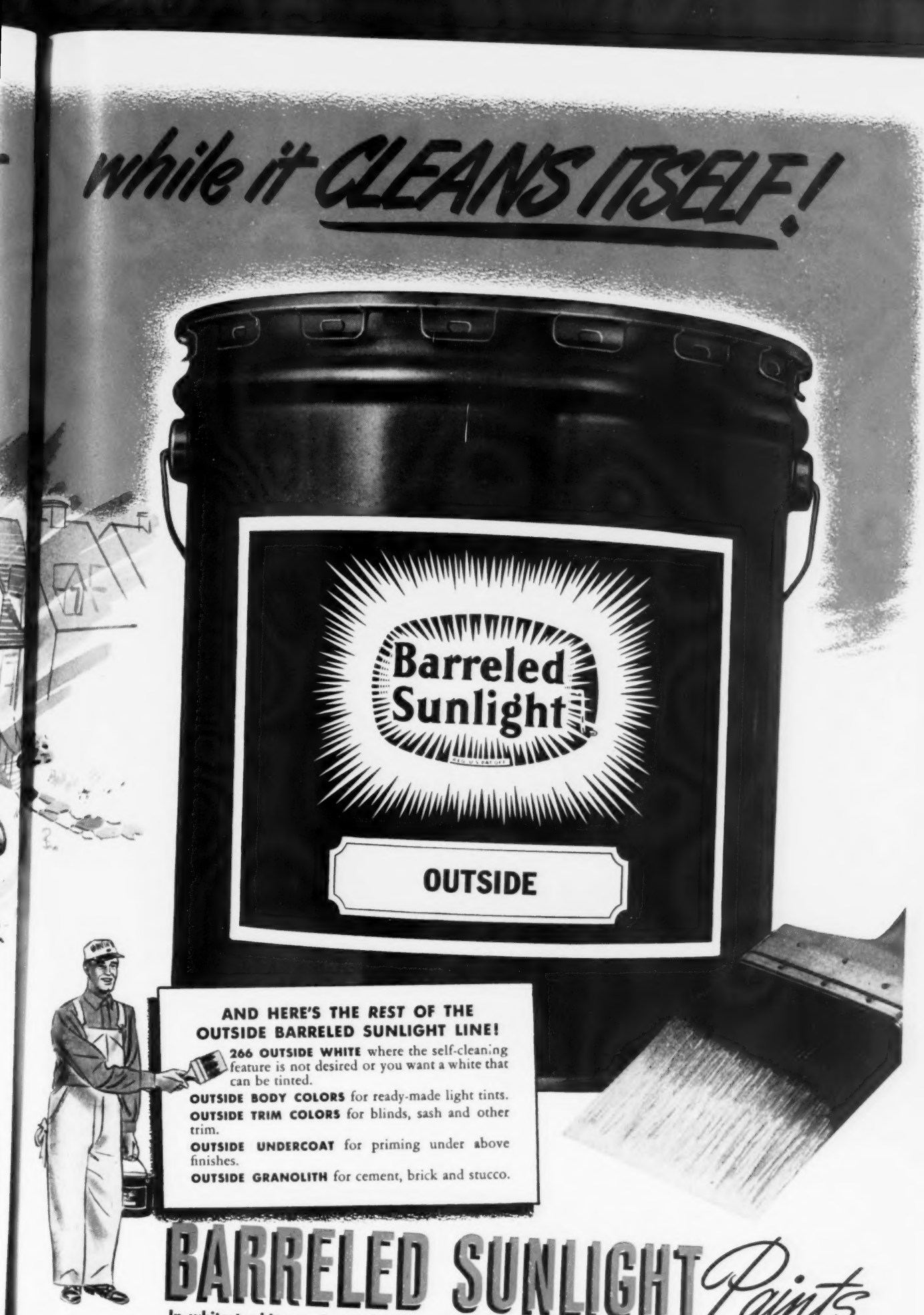
If you've hesitated to repaint your mill village or other properties during the "scarcity" years...or have painted, to your regret, with sub-standard materials, NOW is your chance to obtain a top grade job* again.

Barreled Sunlight Self Cleaning Outside White, a multiple pigment paint, will give you added years of protection and cut your maintenance costs. Call in a Barreled Sunlight man for helpful advice on painting exteriors (and interiors) of company homes, in white or color combinations at sensible, down-to-earth costs. Write U. S. GUTTA PERCHA PAINT COMPANY — 20-1 Dudley Street, Providence, Rhode Island.

*Deteriorated surfaces must, of course, be properly prepared before repainting.

Visit us at Booth 222 at the Southern Textile Exposition, Greenville, S. C., October 4 - 9

while it CLEANS ITSELF!



AND HERE'S THE *REST* OF THE OUTSIDE BARRELED SUNLIGHT LINE!

266 OUTSIDE WHITE where the self-cleaning feature is not desired or you want a white that can be tinted.

OUTSIDE BODY COLORS for ready-made light tints.

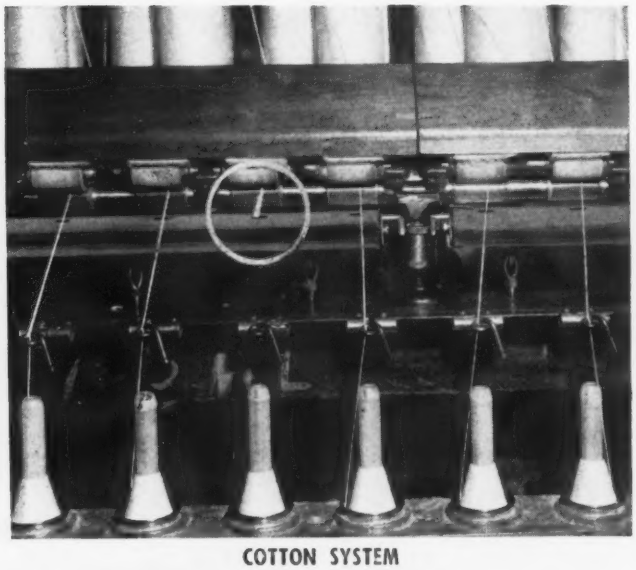
OUTSIDE TRIM COLORS for blinds, sash and other trim.

OUTSIDE UNDERCOAT for priming under above finishes.

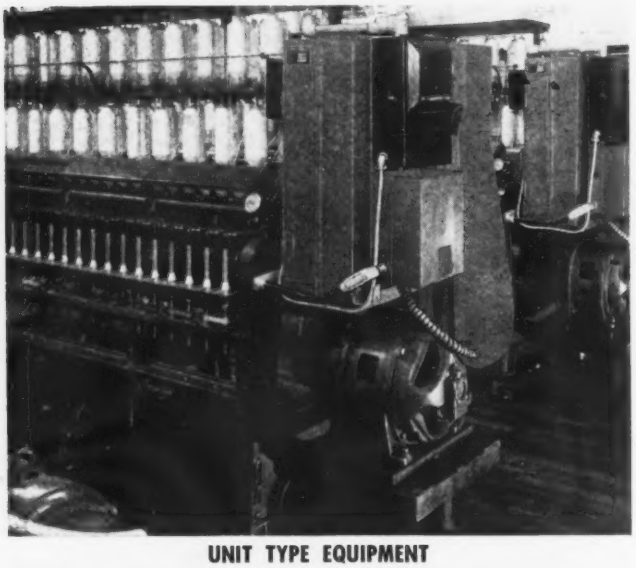
OUTSIDE GRANOLITH for cement, brick and stucco.

BARRELED SUNLIGHT *Paints*

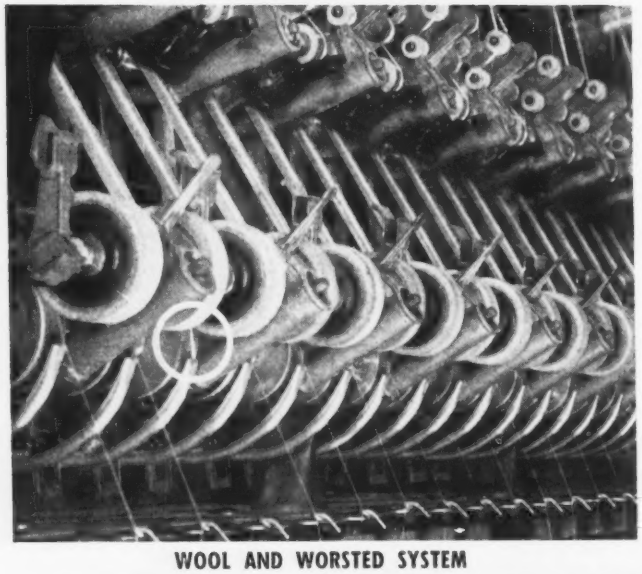
In whitest white or clean, clear, pleasing colors, there's a BARRELED SUNLIGHT Paint for every job



COTTON SYSTEM



UNIT TYPE EQUIPMENT



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and obtain these results:

- **INCREASED PRODUCTION**
  - Higher frame speeds
  - More productive spindles
  - Less frame stoppage
  - Less ends down
  - Better running work
- **IMPROVED YARN QUALITY**
  - No spinning doublings
  - Less slubs, gouts and end piecings
  - Improved end piecings
  - No "wild" or flying ends
- **LOWER MANUFACTURING COSTS**
  - Less spinning, cleaning and sweeping labor
  - Improved and controlled waste salvage
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  - Reduced spinner training time

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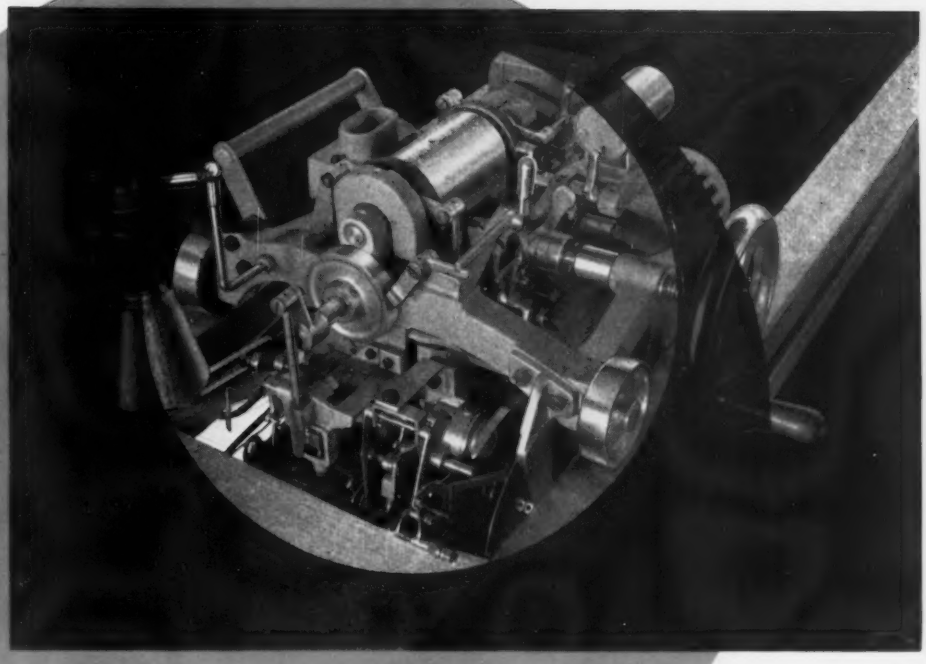

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Experienced technical personnel is available to analyze with you the money-saving possibilities and advantages which may be realized through the use of this equipment. Complete service facilities and parts stocks are maintained. Instruction by experts is provided to assure maximum efficiency and continuous trouble-free performance.

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- warp leasing
- reaching-in
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- denting
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- yarn evenness testing
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Now Mill Tests Prove
DAYCO
ROLL COVERINGS
spin more uniform yarn with less
lap ups and fewer ends down!
Test With 264 Spindles Equipped With Daycos...
272 Spindles With Brand "C" Coverings
47.6% fewer ends down with *Daycos!* That's the result of a test conducted in a large yarn mill in central North Carolina. *Again, Daycos outperformed the competitive roll covering* when run under identical circumstances of frame condition, temperature, relative humidity and with the same kind of yarn. As a matter of fact, *Daycos* are unaffected by temperature or humidity changes . . . their superior physical properties remain constant throughout their long, trouble-free life.

Test of 1,134 Spindles...Covering 13,261 Sp. Hrs.

Dayco Roll Coverings showed fewer lap ups on top and bottom rolls and 11.7% less unclassified ends down. Actually, there were three times more lap ups on the bottom rolls where Brand "A" roll coverings were used—although all the steel rolls had just been reworked and were in top operating condition. This is on-the-job proof that, in test after test, under actual operating conditions, in mill after mill, *Daycos* run more uniform yarn with up to 50% fewer ends down.

North Carolina Mills Test 35.4% Less Ends Down With Dayco Roll Coverings

This test was run on frames making 24-1/65% cotton and 35% acetate staple. Despite the fact that the *Dayco*-equipped frame was next to the window, the *Dayco Roll Coverings outperformed a similar type covering on lapping, unclassified ends down and total ends down.* Too, the *Dayco* coverings did not eyebrow while Brand "B" coverings eyebrowed greatly. Another typical example of how *Daycos*, built for their specific job, assure perfect drafting uniformity . . . at the lowest cost per frame.

7 MORE REASONS WHY YOU SHOULD USE DAYCOS

1. Remove more of the foreign elements from the yarn.
2. Not affected by temperature or humidity changes.
3. Oil-resistant and static-free.
4. *Daycos'* surface drafting properties improve with use.
5. *Daycos* will outlast other type roll coverings.
6. Equally efficient for natural and synthetic fibers.
7. Easy to apply.

In mill after mill . . . test after test . . . under actual mill operating conditions, it's the *Dayco* frames that consistently produce the most uniform yarn at the lowest cost per frame. It's no wonder mills everywhere are insisting that every frame be 100% *Dayco*-equipped. Whether your frames are equipped with flat or revolving clearers, there's a specially engineered *Dayco* to run natural or synthetic fibers . . . better, more economically. Let them prove themselves on your frames. Send your order direct to The Dayton Rubber Company, *Textile Products Division, Woodside Building, Greenville, S. C.*

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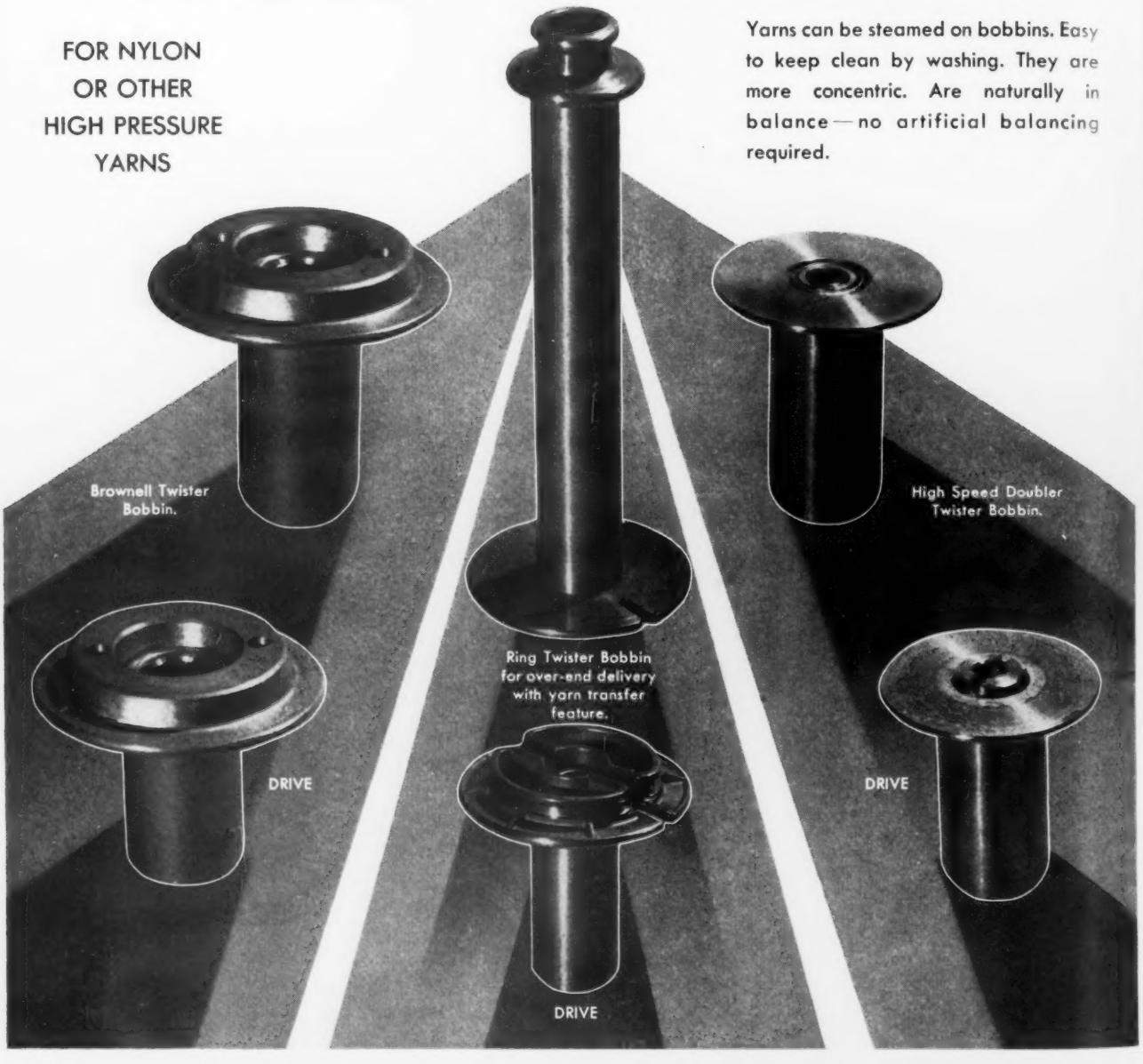
LESTERSHIRE

All Aluminum Bobbins for

TWISTING or SPINNING

FOR NYLON
OR OTHER
HIGH PRESSURE
YARNS

Yarns can be steamed on bobbins. Easy to keep clean by washing. They are more concentric. Are naturally in balance—no artificial balancing required.



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"GULFGEM OIL lasts longer – keeps spindles and bolsters clean"

says the Superintendent of this nylon throwing mill.

"Our oil change period was extended from one week with the oil formerly used to six weeks with Gulfgem!

These nylon throwing mill spindles turn at 14,000 r.p.m. (Right) Gulfgem Oil, as recommended by the Gulf Lubrication Engineer "in the picture" helped eliminate sludge deposits, overheating and excessive spindle wear in these spinning frames.

"Gulfgem outlasts every other spindle oil we've tried," says the Superintendent of this modern nylon throwing mill. "And with this quality oil we've eliminated excessive spindle wear, overheating, and sludge deposits."

"Where we were forced to change other spindle oils every week, we change Gulfgem every six weeks. Even then Gulfgem shows no evidence of deterioration—the change is just a precaution, not a necessity."

In spindle oils resistance to sludging is a major requirement—and here again Gulfgem proves its superiority. This quality spindle oil stays remarkably pure and clean—has highest resistance to oxidation and the formation of harmful deposits.

To get the benefits of this quality oil for your spindles, and for expert help on other lubrication problems in your mill, write, wire, or phone your nearest Gulf office today and ask a Gulf Lubrication Engineer to call.

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CLEAN FLOORS

Clean floors tell more than a story of sanitation. They also reflect management alert to these important facts: Clean floors aid safety underfoot . . . reduce fire hazards . . . bolster worker morale and thereby aid production.

Floors that are cleaned with *job-fitted* mechanical equipment are even more revealing. They also tell of big savings in labor costs. The *Finnell Combination Scrubber-Vacuum* shown above—a self-propelled machine for use on large-area floors — offers a good example. This *Finnell*, with one or two operators, can do a cleaning job better in half the time it takes a crew of six to eight using separate equipment for scrubbing and picking up. A complete cleaning unit *all in one*, this *Combination Machine* applies the cleanser, scrubs, rinses if required, and picks up. Has a cleaning capacity up to 8,750 sq. ft. per hour!

Finnell makes several *Combination Scrubber-Vacuum Machines*, as well as a full line of *Portable Machines* for wet scrubbing, dry scrubbing, dry cleaning, waxing, and polishing . . . in sizes designed to fit specific needs. *Finnell* also makes a full line of *Cleansers* specially developed for the greater speed of mechanical scrubbing . . . and *Sealers*, *Waxes*, and *Accessories* for every floor-maintenance need. And there's *a Finnell man nearby* to help train your maintenance operators in the proper use of *Finnell* equipment and supplies.

For consultation, free floor survey, demonstration, or literature, phone or write nearest *Finnell* branch or Finnell System, Inc., 1909 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

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QUALITY LOOM HARNESS EQUIPMENT

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STEEL HEDDLES

Mills all over the World today demand the flat steel heddle in order to obtain increased production, this up-to-date equipment meeting all loom conditions and warp fibres.

Firmer, more flexible and smoother—Flat Steel Heddles are replacing the old-fashioned wire type with astonishing results.

Look for Quality-Production in this longlasting Loom Harness Equipment made by the largest exclusive manufacturer of Loom Harness Equipment in the world with every known facility and resource at its command.

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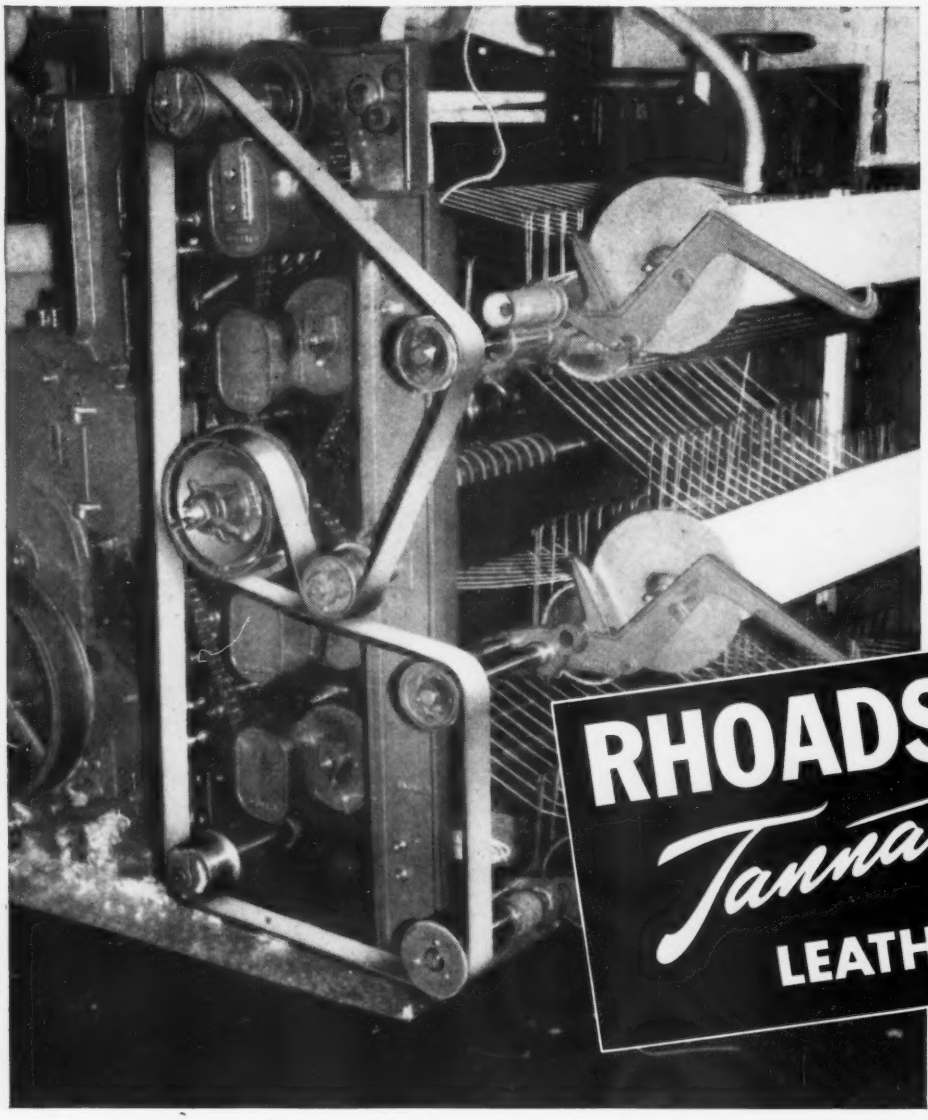


RHOADS *Tannate* WATERSHED **LEATHER BELTING**

In Textile Mills throughout the country—on all main types of machinery—Rhoads Tannate Leather Belts assure maximum production at lower costs, because of their high efficiency, low maintenance and long life.

Tannate Belts withstand high temperatures, humidity, machine oil and many chemicals; carry full load even when damp; require fewer take-ups and less maintenance; have a high power transmitting capacity; are stronger than most oak belts.

Tannate Belts have helped many mills increase uniform yardage and reduce shutdowns. Ask us how Tannate can help you, too.

Visit Booths 131-132 at the Southern Textile Show, Greenville, S. C.,—October 4th to 9th.

STRAPS FOR LOOMS AND OTHER MECHANICAL LEATHER PRODUCTS

PRODUCERS OF FINE LEATHER FOR 246 YEARS

J. E. RHOADS & SONS

35 NORTH SIXTH ST., PHILA. 6, PA.

NEW YORK • CHICAGO • ATLANTA

ESTABLISHED 1702

Premier Showing at the Southern Textile Exposition

HUNT COTTON AND RAYON LOOMS

hit of the show!

Perhaps the most interesting machinery exhibits at the Southern Textile Exposition will be the latest high speed models of the Hunt Rayon Filament Loom and the Hunt Cotton Loom.

As the only looms originally built with Hunt Spreaders and Hunt Individual Motor Drives, each is outstanding in its field. Both contribute greatly to higher speed production and better quality cloth output.

The Hunt exhibit will also feature Hunt Spreaders and Hunt Individual Motor Drives as attachments for looms of other makes; and there will be a showing of the complete line of Hunt textile equipment.

TOURS OF HUNT MACHINE WORKS will be a pleasant feature of your visit to the Southern Textile Exposition. Guides will show you the interesting equipment and operations in the manufacturing of Hunt textile machinery.

We cordially invite you to visit our booths and our plant during the Southern Textile Exposition, in Greenville, S. C., October 4th-9th, 1948.

VISIT US AT BOOTHS 128,129,130

HUNT MACHINE WORKS, Inc.

200 ACADEMY STREET TELEPHONE 2-5681

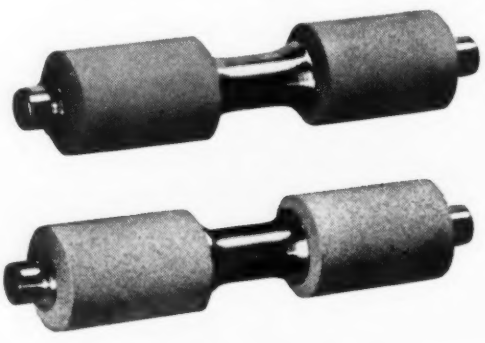
GREENVILLE, SOUTH CAROLINA

ACCOTEX COTS . . . by the makers of Accotex Aprons

Armstrong's NC-727 Accotex Cot gives you the advantages of both synthetic rubber and cork. This combination of toughness and high friction provides maximum eyebrow resistance in a synthetic cot. It also results in better drafting, high yarn strength, less slicking up. In addition, Accotex Cots offer long initial service life. They can be rebuffed 5 or 6 times.

Armstrong's J-490 Accotex Cot is outstandingly superior in resistance to top roll laps. You can prove this right on your own frames. It is the cot to use where lapping is a serious consideration when running either wool or synthetic fibers on standard cotton system equipment.

Armstrong's Accotex Cots are now serving more spindles than any other roll covering. In addition to the NC-727 and the J-490, Accotex Cots are made in other formulations, with and without cork, for special services. Ask your Armstrong representative for recommendations on the best type for your particular work.



ACCOTEX COTS
CORK COTS

Armstrong's Accotex Aprons are available for single apron and double apron types of long draft equipment, for roving as well as spinning frames.

You get increased production of quality yarn

YOU NORMALLY NEED replace aprons only at regular overhauling periods when you run on Armstrong's Accotex® Long Draft Aprons. Each one wears uniformly. Each is made of a tough synthetic rubber compound controlled during manufacture to eliminate the variations normal in a natural product. With Accotex on your frames, production keeps running—and running smoothly.

Accotex Aprons are seamless, too. The special Accotex Apron construction, originated by Armstrong, uses heavy layers of synthetic rubber to enclose a strong, non-stretch interliner. This provides added assurance that these aprons will not tear, break open, or stretch while they are in service.

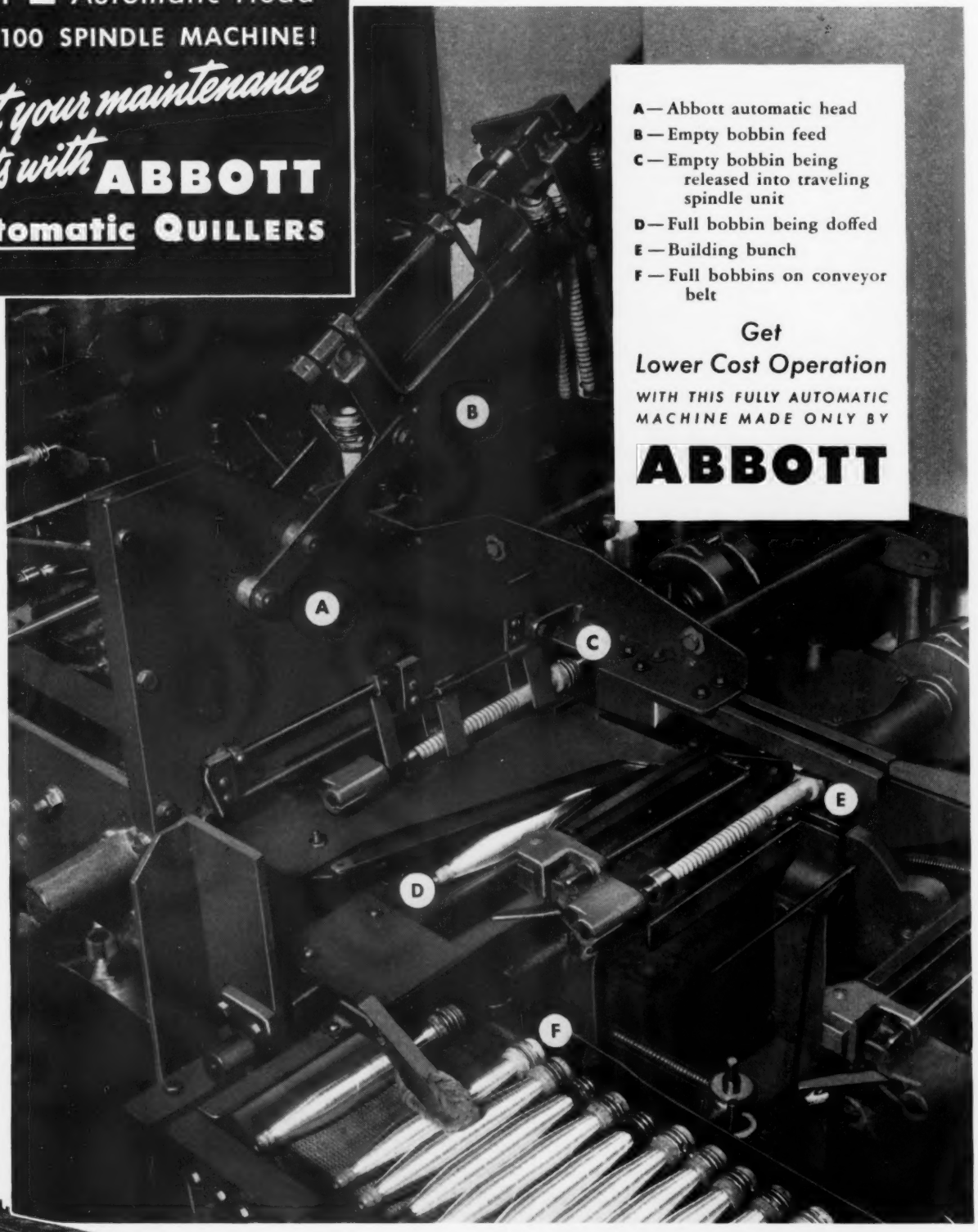
Since Accotex Aprons will not crack or scuff, they help produce cleaner-running work with less waste. These aprons are not affected by temperature or humidity. They perform with a minimum of lapping. And the smooth, uniform surface of Accotex Aprons insures better drafting and good fiber control.

Check all the advantages of these uniformly wearing aprons on your own frames. See how Accotex Aprons help you step up yarn quality and increase poundage. Ask your Armstrong representative for samples, prices, and additional information. Or write today to Armstrong Cork Company, Textile Products Department, 8309 Arch St., Lancaster, Pennsylvania.

ARMSTRONG'S ACCOTEX APRONS

ONLY **1** *Automatic Head*
PER 100 SPINDLE MACHINE!

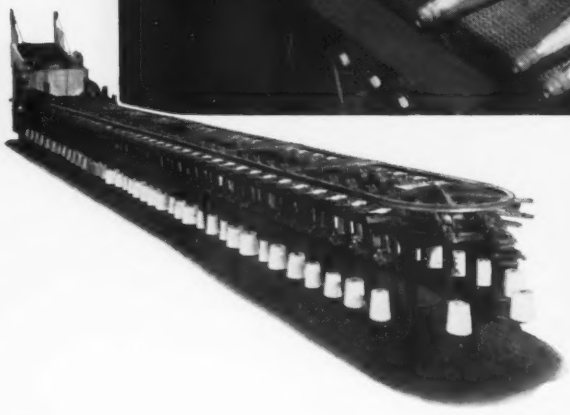
Cut your maintenance costs with **ABBOTT**
Automatic QUILLERS



A — Abbott automatic head
B — Empty bobbin feed
C — Empty bobbin being released into traveling spindle unit
D — Full bobbin being doffed
E — Building bunch
F — Full bobbins on conveyor belt

Get
Lower Cost Operation
WITH THIS FULLY AUTOMATIC MACHINE MADE ONLY BY

ABBOTT



Write for further information to:

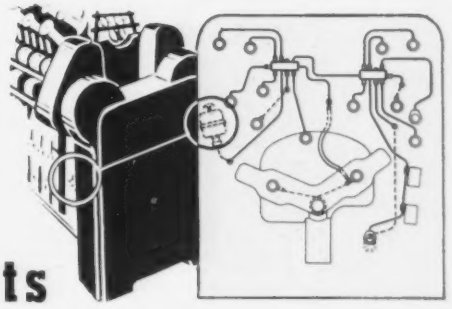
ABBOTT MACHINE COMPANY
FACTORY AND MAIN OFFICE:
WILTON, NEW HAMPSHIRE
SOUTHERN OFFICE: GREENVILLE, SOUTH CAROLINA

LEADING MILLS

PROFIT

with "metered" lubrication!

Here's one case history . . . a leading Southern mill (name on request) compared Bijur lubrication on 244 spinning frames with hand oiling on the rest of their 500 spinning frames, and realized a saving of over 46 man hours of oiling time per week . . . plus a 33 1/3% reduction in lubricant. By converting maintenance time into more time for production, the Bijur system helps protect profits!



Bijur-oiled bearings cut costs

by running smoothly on a correct oil film constantly maintained while the machine operates. Bijur automatic lubrication is simple, effective, and "metered" to each individual bearing's need. As a result, oiling time is reduced, operators are released for *production*, there's no drip, drainage, or waste. Maintenance and down-time are minimized . . . and you avoid stained fabrics and interrupted production schedules from improper lubrication when you use Bijur.

● *Completely closed, central, custom-engineered lubrication:* Here's a typical spinning frame installation where the Bijur system regularly lubricates 17 important points, all concentrated within the head end, while the machine is in operation. Each point automatically receives its required "metered" quantity of oil at one and the same time. There's no oiling time, down-time, or "forgotten" bearings with Bijur on the job.

When ordering new machines . . . specify BIJUR!

BIJUR LUBRICATING CORPORATION

LONG ISLAND CITY, • NEW YORK

Write today **for your copy of "Metered Lubrication of Textile Machinery"**

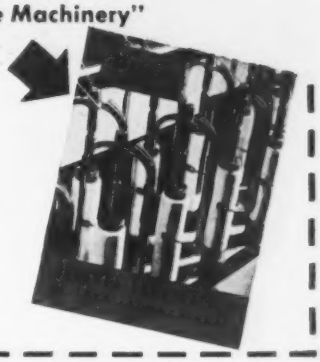
We'll see you at the GREENVILLE SHOW AT BOOTH 104

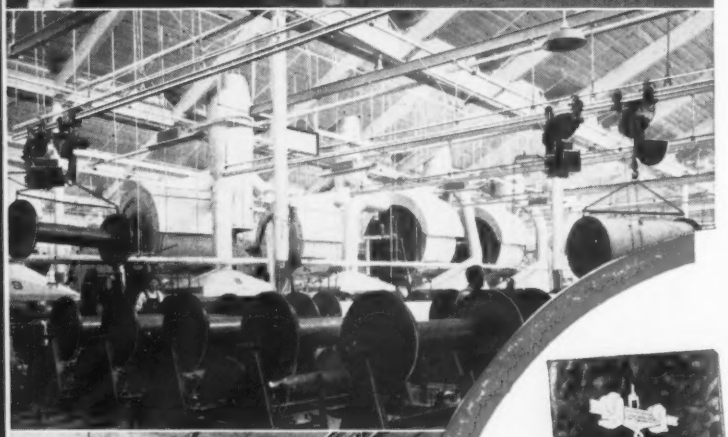
Please send me a copy of your new Bulletin 6A
"Metered Lubrication of Textile Machinery"

NAME..... TITLE.....

COMPANY.....

ADDRESS.....





AMERICAN

OVERHEAD HANDLING EQUIPMENT

See Booth No. 112
Southern Textile Exposition

American MonoRail Overhead Handling Equipment will increase the speed of your operations, reduce accidents and fatigue and cut your overall costs. It will pay for itself in a surprising short time by turning untold non-productive hours into productive hours.

Regardless of size or type of application, American MonoRail engineers can help. This service is available without obligation. Let's talk it over at the textile show.

Send for bulletin C-1. A 56 page book showing successful applications of American MonoRail Systems.

THE AMERICAN

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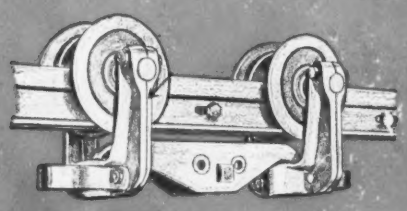
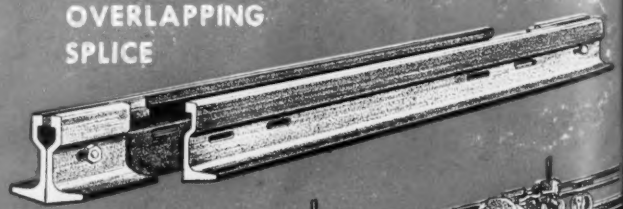
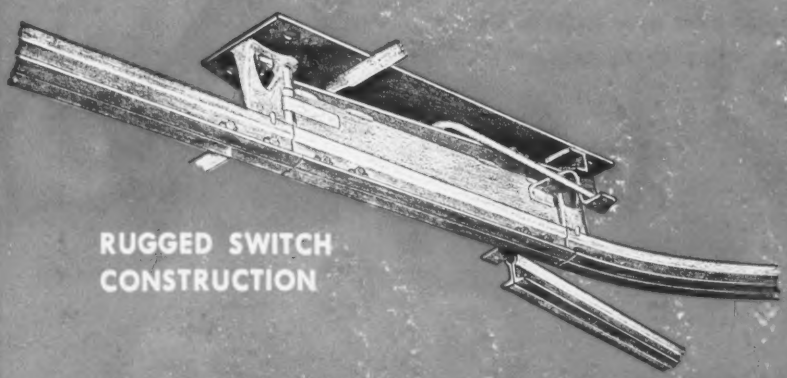
EASY ROLL TROLLEYS

TWO-PIECE FORGED YOKES

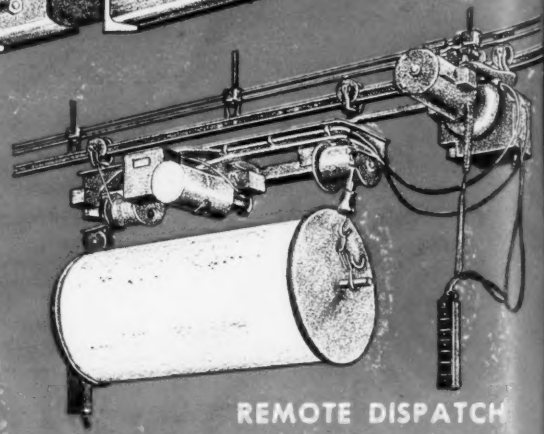


OVERLAPPING SPLICE





RUGGED SWITCH CONSTRUCTION



REMOTE DISPATCH BEAM CARRIER

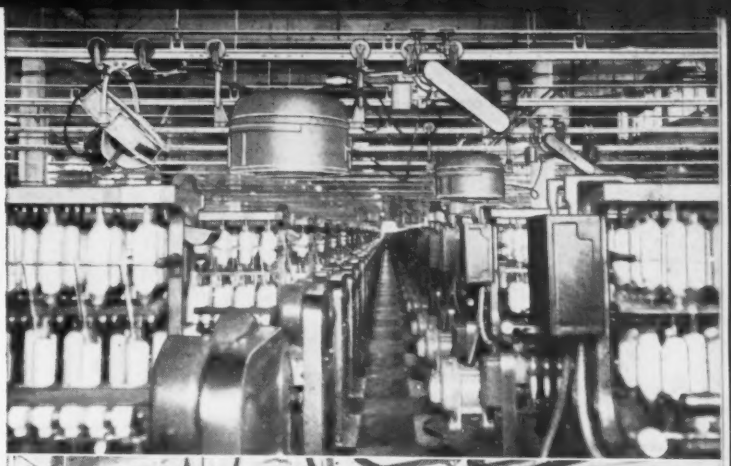
MONORAIL

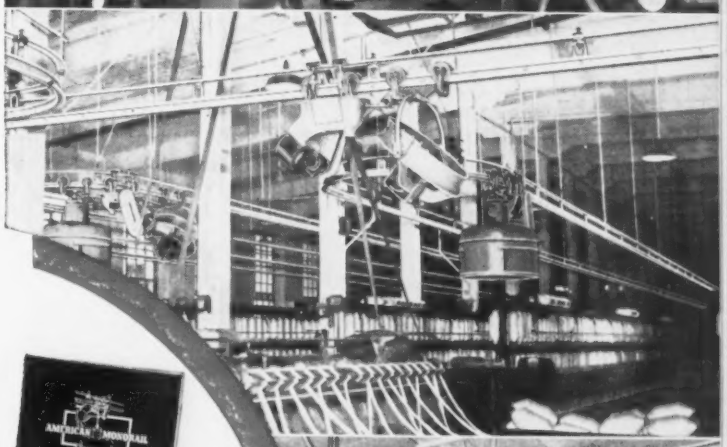
AUTOMATIC CLEANING SYSTEMS

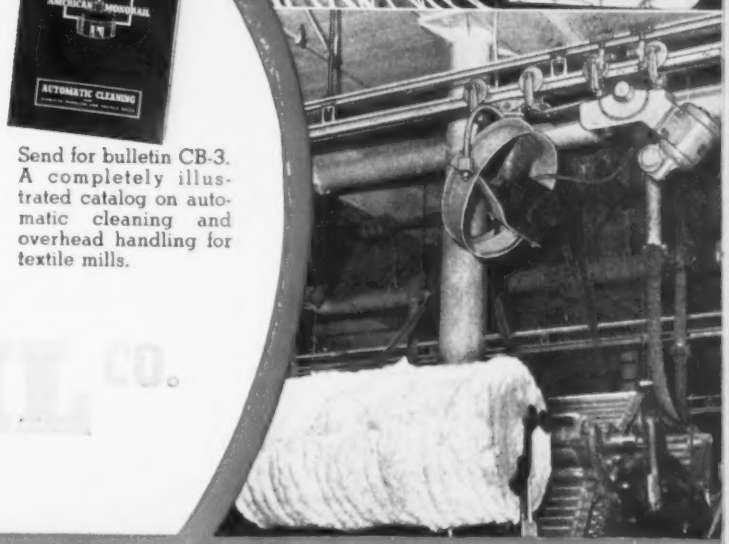
See Booth No. 111
Southern Textile Exposition

It pays to clean automatically and you can do it better and more economically with American MonoRail Automatic Cleaners. Automatic cleaning keeps machines producing full time, enables operators to increase their output and reduces the number of gouts or bunches in the yarn.

While at the show, plan to talk to an American MonoRail engineer. He will quickly prove that it pays to clean automatically.





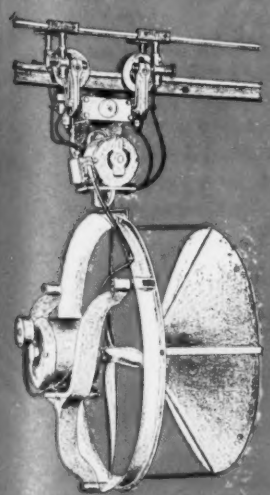


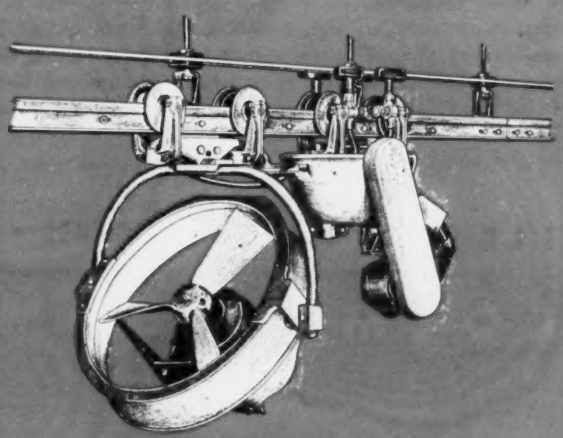
Send for bulletin CB-3. A completely illustrated catalog on automatic cleaning and overhead handling for textile mills.

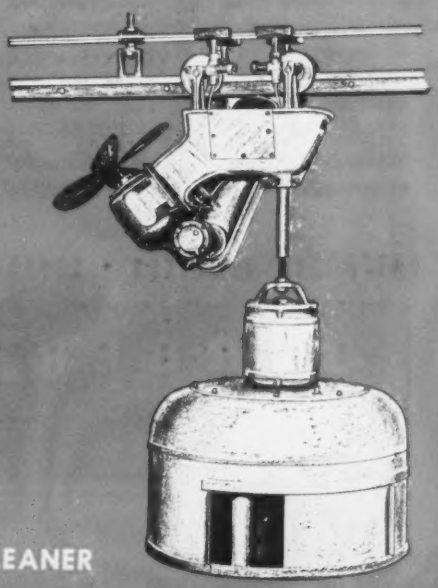
MONORAIL CO.

CLEVELAND 7, OHIO

AUTOMATIC CEILING CLEANER

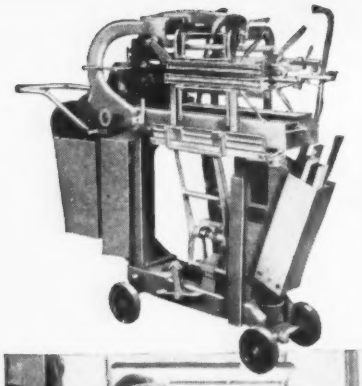




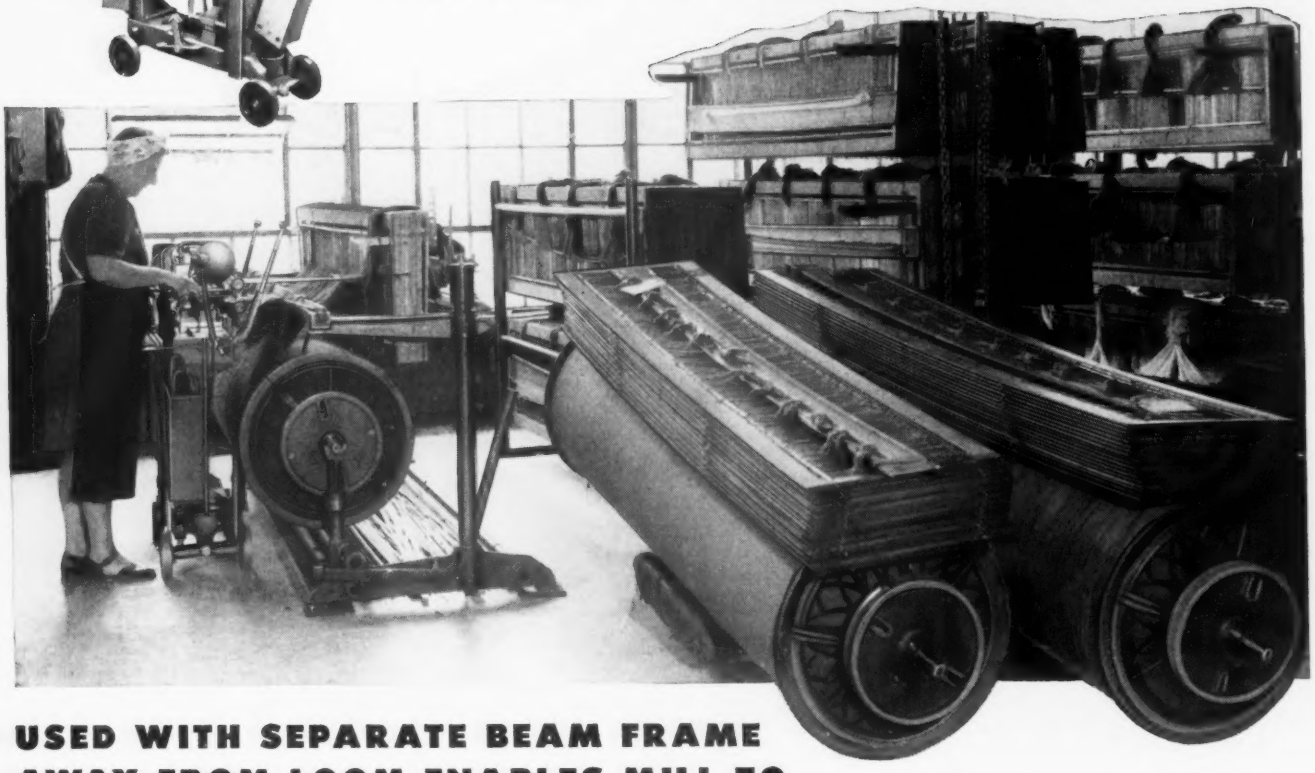


AUTOMATIC MONITOR CLEANER

AUTOMATIC CLEANER



BARBER-COLMAN *Portable* WARP TYING MACHINE



USED WITH SEPARATE BEAM FRAME AWAY FROM LOOM ENABLES MILL TO TIE-IN AND STORE EXTRA LOOM BEAMS

ONE SHIFT ON WARP TYING MACHINE MAKES UP BEAMS FOR TWO SHIFTS ON LOOMS

The weave room for this mill gets its entire warp replenishment from the tying-in department shown above. Here the ends left in the lease and the ends on the new warp are joined. The beams, with proper harnesses and reed all tied-in, are placed on dollies and lined up for delivery to the weave room. Warps with closed drop wires can also be tied; open-end drop wires are replaced at the loom.

While this arrangement requires additional investment in harnesses and beams, in many instances it will pay off in reduced loom down time, when circumstances are suitable. Certain kinds of work should be tied-in at the loom, but often there are cases where tying-in away from the loom will produce substantial savings.

In this mill, the warp tying machine operator is able to prepare beams twice as fast as they are needed in the weave room — with the result that the tying-in department works only one shift to two on the weaving. The extra beams are made up and stored until called for. Note the racks in the background of the picture; they hold leases for various patterns not currently in production, with the ends cabled and knotted ready for combing out and tying-in when wanted.

The Barber-Colman Portable Warp Tying Machine with supplementary Beam Frame is an ideal unit for this set-up because of its speed and flexibility. An average operator can tie up to 4000 ends an hour with this machine, depending on material, and can handle a wide range of counts with only minor adjustments. Barber-Colman Portable Warp Tying Machines are made in several models for all types of yarns — cotton, wool, or synthetics in flat sheets or end and end leases. For details of operations and specific suggestions for application to your work, we suggest you consult your Barber-Colman representative.

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • DRAWING-IN MACHINES

BARBER-COLMAN COMPANY

ROCKFORD • ILLINOIS • U. S. A.

FRAMINGHAM, MASS., U. S. A. GREENVILLE, S. C., U. S. A. MANCHESTER, ENGLAND

Cut YOUR PAINTING MAINTENANCE COSTS AS MUCH AS *40%*

NEW DEVOE HOUSE PAINT MAKES EXTERIORS SPARKLING WHITE WITH

Now . . . you can repaint in less time at less cost than ever before!

First on the market—there is no other paint like Devoe One-Coat White House Paint! Proved by performance on 1,861 jobs—year upon year it stood the test of time . . . fulfilled every expectation. The secret is two-fold . . . superlative self-sealing ability and a hiding power exceeding *twice* that of ordinary paints.

Think what this means to you! With other costs mounting higher and higher here is a product that brings you substantial savings . . . at no sacrifice in quality! Devoe One-Coat House Paint gives you the brightest, whitest, most dazzling repaint job you have ever known. Its brilliant beauty is long lasting, too, for its enamel-like gloss finish is fume resistant and self-cleaning.

Applied to any previously painted outside surface, One-Coat House Paint brushes easily, levels smoothly and builds up well on corners. Your painters find it a pleasure to work with. It dries dust free in 6 to 8 hours and spreads 500 to 550 sq. ft. per gallon.

Take advantage of the remarkable economy and efficiency of this great, new paint. Get in touch with your nearest Devoe Branch or write to Dept. 98, today.

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DEVOE & RAYNOLDS COMPANY, INC.
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There's an Easier Way to increase your Wool Card Production!

IF you are a typically busy mill man you'd need extra arms and perhaps another head to give your wool cards the attention which would increase your production. We suggest the easier way of Ashworth inspection.

Many mills turned to us during the war when they had exhausted all other means of increasing production, and asked that we inspect their cards. By using a more suitable card clothing, changing settings, and making other seemingly minor adjustments, we were sometimes able to increase production as much as 30%, and also to greatly improve quality.

You and your employees may have little time for card inspection but our field men make a specialty of it and are trained for the purpose. They'll inspect your card clothing and make written recommendations, but you'll make the decisions.

An Ashworth card inspection costs you nothing, but may save you thousands of dollars. Write us at Fall River for details.

ASHWORTH BROS., INC.
AMERICAN CARD CLOTHING CO. (Woolen Div.)
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4 FACTORIES · · · 6 REPAIR SHOPS · · · 7 DISTRIBUTING POINTS

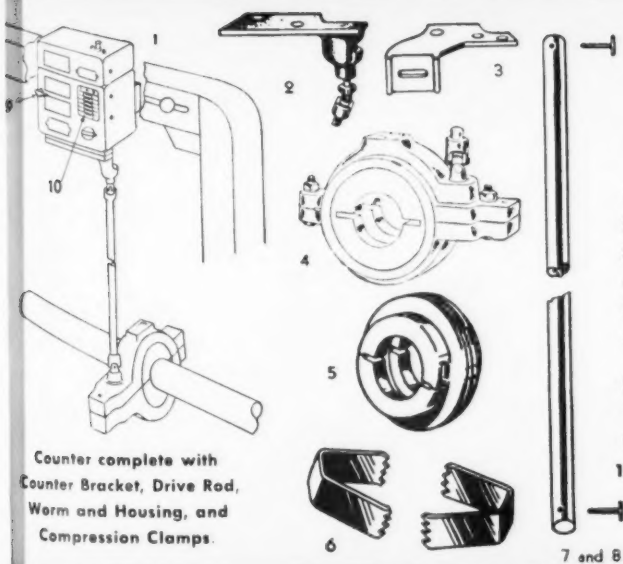
Veeder-Root Vantage-Points

When you buy VEEDER-ROOT 2-3 CONVERTIBLE PICK COUNTERS....

you get all these parts necessary for complete installation

1. Pick Counter.
2. "BQ" Counter Bracket.
3. Cast-Iron Loom Bracket (several styles).
4. Worm Housing } Complete.
5. Worm }
6. Compression Clamps (for Shafts of 1 9/16", 1 11/16", 1 13/16", 1 15/16", 2 3/16", 2 7/16". Pin type drive furnished on all other sizes).
7. Drive Rod, 5/16" Cold Rolled Steel, Drilled.
8. Pins for Fastening Drive Rods into Universal Joints.
9. Yale Lock and Key.
10. Production Record Card. Plus all necessary Bolts, Nuts and Counter Seals.

(Alemite Lubrication Fittings can be furnished on request)



Counter complete with Counter Bracket, Drive Rod, Worm and Housing, and Compression Clamps.

This complete installation is the 15th *Vantage Point* of Veeder-Root 2-3 Convertible Pick Counters.

For full details on *all* 15 *Vantage Points*, call your nearest Veeder-Root representative.

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VEEDER-ROOT 2-3 Pick Counters

Quickly Convertible from 2 to 3-Shift Operation . . . *Right in your Mil*

BOOTH 107 — SOUTHERN TEXTILE EXPOSITION

YOU CAN BE SURE ..IF IT'S.....

ONE SOURCE FOR EVERY TEXTILE NEED IN...

air conditioning

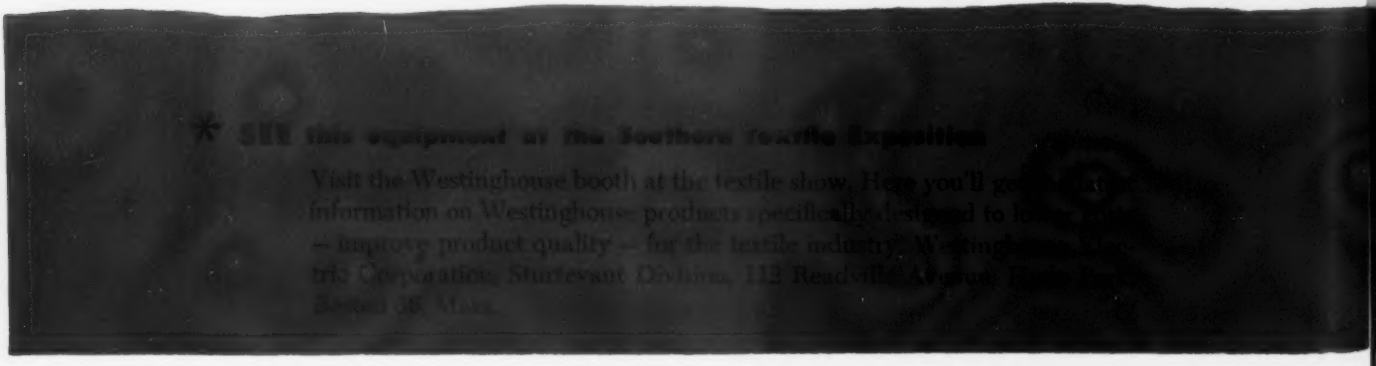
When you buy Westinghouse air conditioning, you get two advantages no other manufacturer can offer: first, the Westinghouse Life-Line Compressor Motor Unit – the leader in the field; second, a *coordinated* system, for *only* Westinghouse makes every important part of an air-conditioning installation.

air cleaning

Westinghouse PRECIPITRON ○ – the remarkable electronic air cleaner that traps up to 90% of all soot, smoke, dirt, and dust; greatly reducing off-quality, dark shades and seconds *in textile production.* Three to five times more efficient than ordinary mechanical filters.

air handling

For conveying, collecting, or drying, or for any job where AIR can do the job better . . . for less. The Westinghouse Sturtevant Division installed the first air handling system for the textile industry and has since designed and installed hundreds of successful installations. Perhaps we can help you.


* SEE this equipment at the Southern Textile Exposition
Visit the Westinghouse booth at the textile show. Here you'll get
information on Westinghouse products specifically designed to
– improve product quality – for the textile industry. Westinghouse
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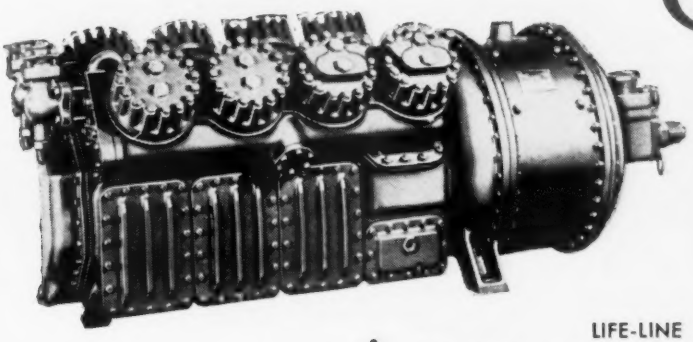
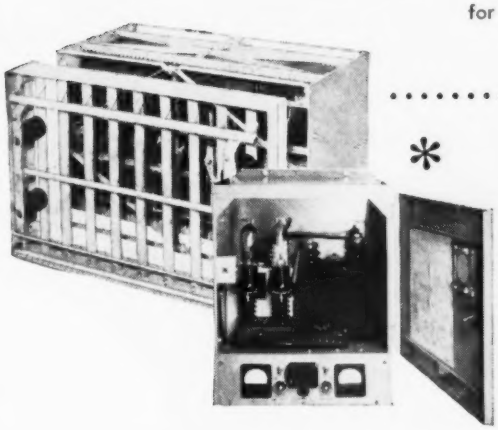
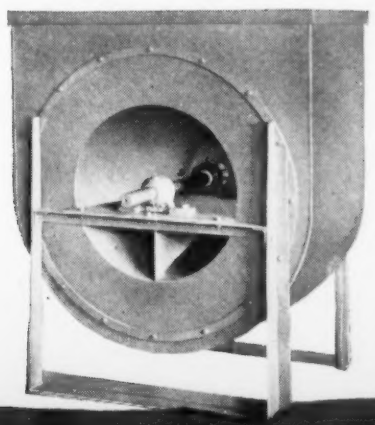


LIFE-LINE
* COMPRESSOR MOTOR UNIT;
hermetically sealed—
for a lifetime of service.



*
WESTINGHOUSE
PRECIPITRON—
cleans air better
than any device
ever developed;
pays for itself in
reduced soilage,
better quality
output.



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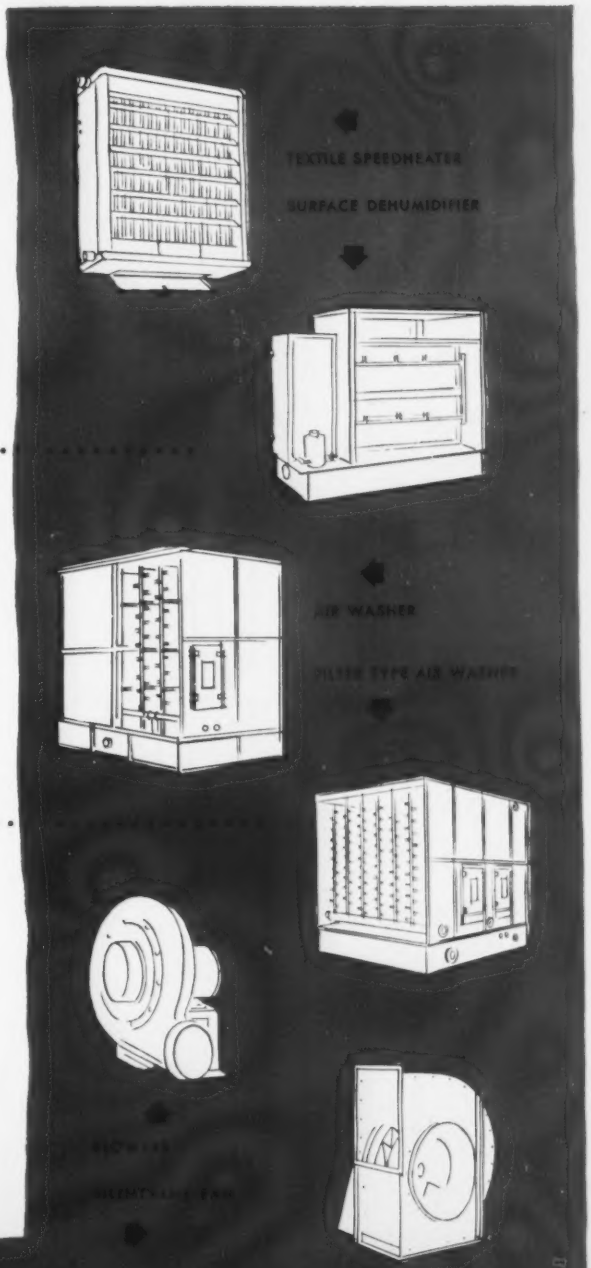
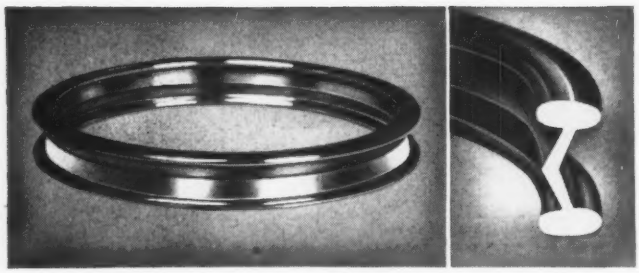
AXIFLO FANS—
straight-thru type and the
new Elbow Axiflo fan that
has no motors, belts, or
bearings in the air stream;
ideal for slasher exhausts.



Westinghouse
Student Division

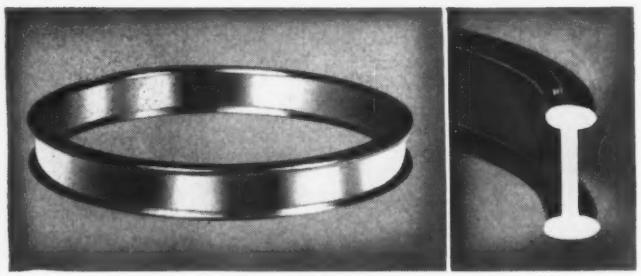
with *Ragan Rings*

YOUR TRAVELLERS *FAIRLY FLY!*



in our exclusive
ANGLE-WEB RINGS

or



STRAIGHT-WEB RINGS
(#1 or #2 flange)

Because of our

NEW, EXCLUSIVE, AERO FINISH!

Aero Finish, our own secret, means better "take-off", a shorter breaking-in time . . . and your frames stay in production longer . . . a real saving in labor costs. You'll find it pays to replace with Ragan Rings . . . They last longer!

RAGAN RING COMPANY, P. O Box 174, Sta. A, Atlanta, Georgia

Representatives: B. F. DEMING CO., 107 Massachusetts Ave., Boston 15, Mass.
Covering the New England States.

JOHN FOARD, P. O. Box 574, Newton, N. C. Phone 178.
Covering the Carolinas and Virginia.

ARTHUR W. HARRIS, P. O. Box 1982, Atlanta 1, Ga.
and IRWIN F. WALL and C. A. "Chillie" STOKES
Phone MAin 2643
Covering entire South except Carolinas-Virginia.

SEE OUR EXHIBIT, SECTION 101, TEXTILE HALL, GREENVILLE, S. C., OCTOBER 4-9

YOU CAN BE SURE...IF IT'S

Westinghouse

THE NAME YOU KNOW IN Lamps

You naturally want the best fluorescent lamps available to keep your lighting system operating at peak efficiency. That's why more and more plants are using Westinghouse fluorescent lamps. Westinghouse lamps are a quality product, subjected to 486 tests and inspections from raw material to finished product.

When you use Westinghouse fluorescent lamps, you can be sure of uniformity, long life and high efficiency—the three important advantages you need to get the most out of your lighting system. So the next time you need lamps, specify Westinghouse.

Send for free booklet A-4759 "A Practical Guide to Westinghouse Fluorescent Lamps and Equipment."

LAMP DIVISION, WESTINGHOUSE ELECTRIC CORP., BLOOMFIELD, N. J.

CLINTON

STARCHES

FOR ALL TEXTILE PURPOSES

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SOUTHERN TEXTILE EXPOSITION

GREENVILLE, SOUTH CAROLINA

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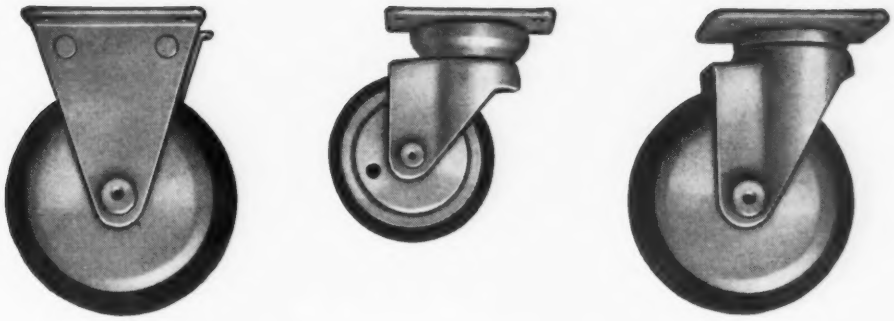
CLINTON INDUSTRIES, INC.

CLINTON, IOWA



Speed Up Your Old Equipment—

give it new load-floating Colson Casters

Rolling equipment that doesn't roll *easily* reduces efficiency and profits in your mill.

The COLSON representative will gladly show you how new casters can speed up your materials handling—show you which COLSON casters are specifically suited to your requirements.

There are 1458 standard COLSON casters—many designed especially for textile mills. They roll easily over all floors, swivel freely and are rust-resistant. A wide range of models can be equipped with thread guards.

The COLSON Corporation also manufactures many types of materials-handling equipment—a complete line of hand trucks, platform trucks, box trucks, drum and barrel trucks and special devices.

It pays you to write us today concerning your caster or materials-handling problems.

THE COLSON CORPORATION

ELYRIA, OHIO

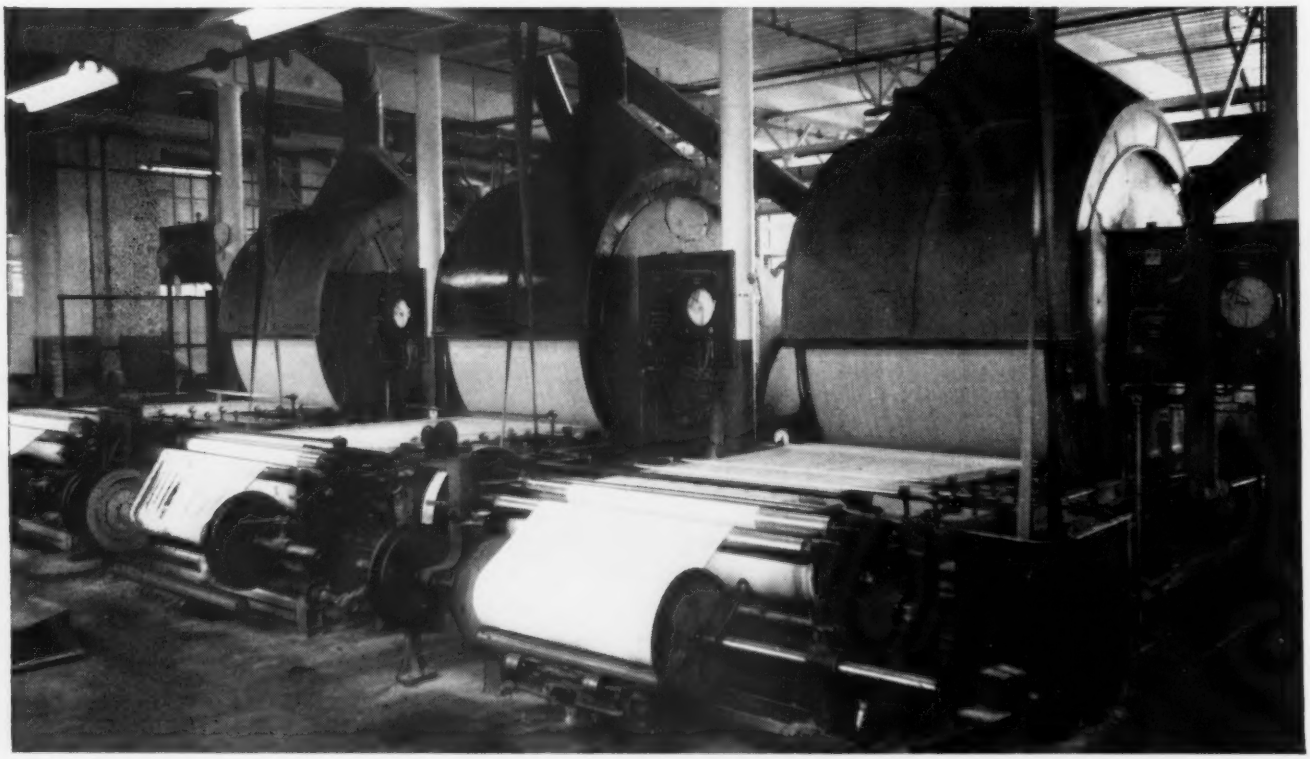
CASTERS • INDUSTRIAL TRUCKS AND PLATFORMS • LIFT JACK SYSTEMS • BICYCLES • CHILDREN'S VEHICLES
WHEEL CHAIRS • WHEEL STRETCHERS • INHALATORS • TRAY TRUCKS • DISH TRUCKS • INSTRUMENT TABLES

Got Problems?...Let's

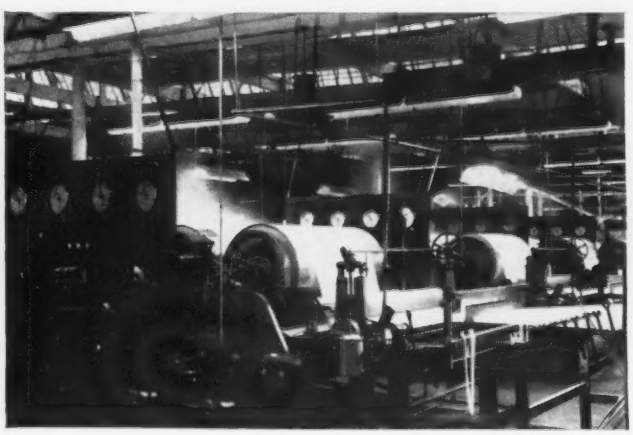
HERE are six examples of Taylor Accuracy at work in leading textile mills. If you don't actually see your plant on these pages—maybe you do see an answer to some problem that is worrying you about slasher or dye control. Bring your problems to the Taylor Exhibit at the Textile Show. (Booths 432-3-4)

Our Engineers will be glad to give you an on-the-spot explanation of how Taylor Automatic Controls can save you money and increase your production. For example, we have complete control systems for *size cooking; size storage; size box level and temperature; cylinder pressure and temperature—and for every type of dyeing.* Taylor Instrument Companies, Rochester, N. Y., and Toronto, Canada.

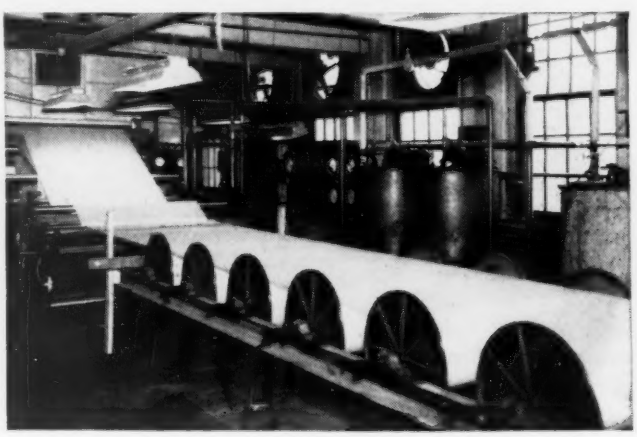
Instruments for indicating, recording and controlling temperature, pressure, humidity, flow and liquid level.



Utica and Mohawk Cotton Mills, Utica, N. Y. Three panels of their complete new Taylor Automatic Slasher Control System. Accurate Taylor control is maintaining correct size box level and temperatures and drying cylinder temperatures.

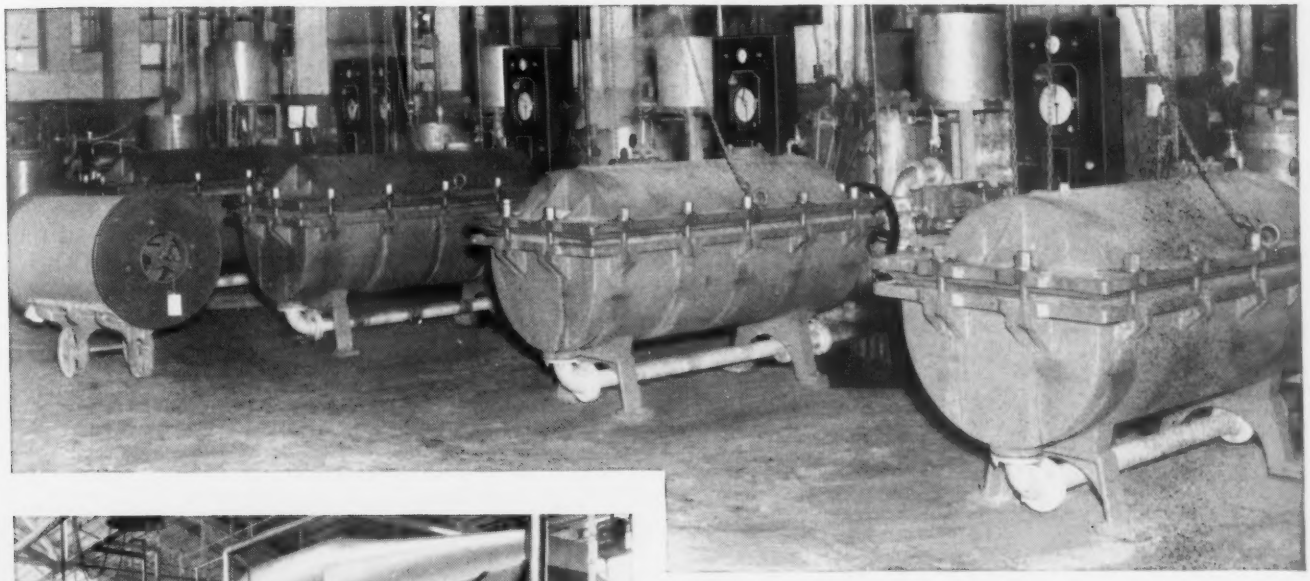


Hoosac Mill, North Adams, Mass., weavers of fine rayon fabrics. Every slasher has a battery of four Taylor Fulscope Recording Temperature Controllers maintaining the desired cylinder temperature and an accurate minute-by-minute temperature record.

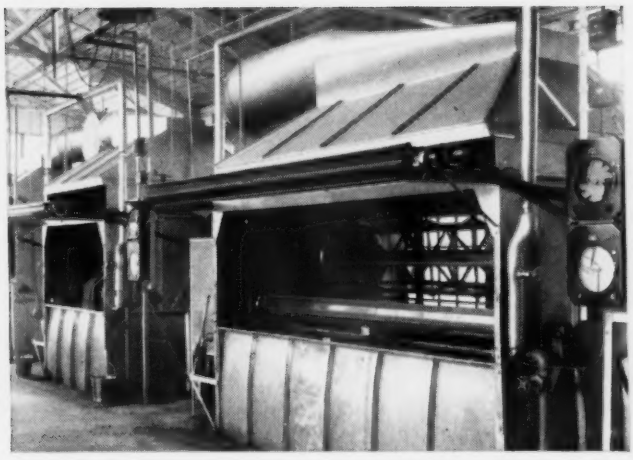


Cleveland Worsted Mills, Cleveland, Ohio. Entire slasher operation is being controlled by Taylor Recording Fulscopes. Size preparation, as well as the hot air slasher itself, is automatically controlled.

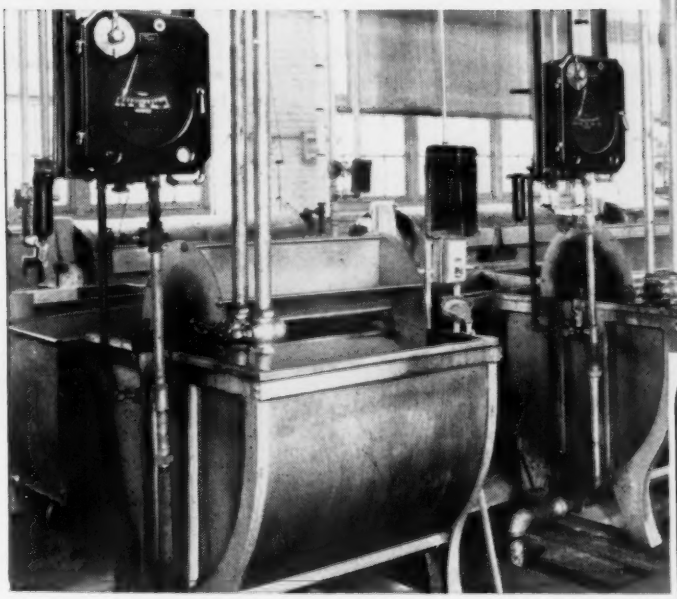
discuss them at the Textile Show!

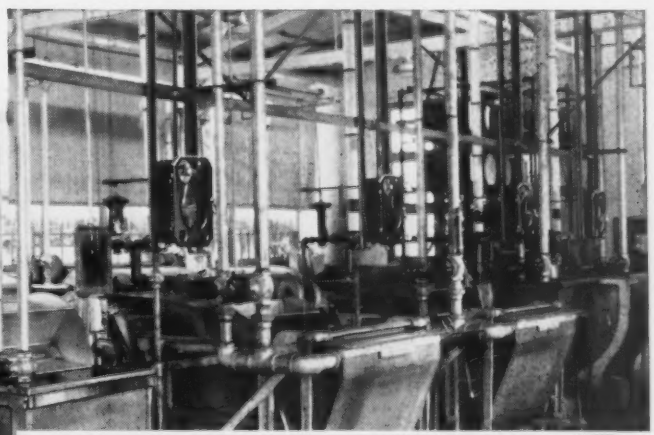


Taylor-equipped beam dyeing machines in a big southern cotton mill. This system not only operates automatically—at minimum cost—but delivers more uniformly high quality than was ever possible with hand control.



Marshall Field's Fieldcrest Division, Spray, N. C. Taylor Fulscope Time Schedule Controllers delivering top quality every time on this battery of Rodney-Hunt wool piece dye machines—and doing it automatically.





Dexdale Hosiery Co., Lansdale, Pa. A few of many Taylor-Controlled hosiery dye machines turning out a consistently uniform product at minimum cost. This completely automatic control also gives big steam savings and greatly reduces operators' responsibility.

Taylor Instruments

MEAN

ACCURACY FIRST

IN HOME AND INDUSTRY

JUST WHAT THE DOCTOR ORDERED

and YOU'RE the doctor

A. P. T. Bobbin for Cotton Warp Spinning Frames

You may not know it, but A. P. T. Yarn Carriers are made to YOUR prescriptions, for YOU, we presume, are typical of the many textile men who know what they need in yarn carriers and have come to us with "prescriptions" to be filled.

Every item in our line, built to carefully predetermined requirements, has called for original thinking. Some represent pioneering from the ground up; others merely improve upon what has gone before; but in no case are they just an attempt to equal competitive products. If we can't make something better, we don't make it.

The A. P. T. Warp Spinning Bobbin for cotton and rayon staples is one outstanding example of how A. P. T. pioneers with the textile industry. This bobbin was built to specifications supplied by leading textile mills and textile machinery manufacturers.

We claim no credit for the idea. We are perfectly satisfied with the fact that we were able to make the idea a reality and that the A. P. T. Bobbin has become standard equipment on leading makes of new cotton warp spinning frames.

If you want something better, something that "fills a prescription," try A. P. T. Yarn Carriers.

AMERICAN PAPER TUBE COMPANY

ESTABLISHED 1898

WOONSOCKET, R. I. GREENVILLE, S. C.

SALES OFFICES IN NEW YORK AND CHICAGO

A-P-T-

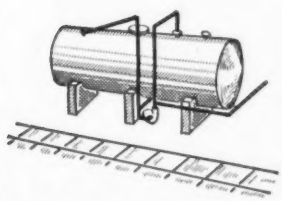
YARN CARRIERS

See our exhibit in Booth 108 at the Southern Exposition, Greenville, October 4th-9th

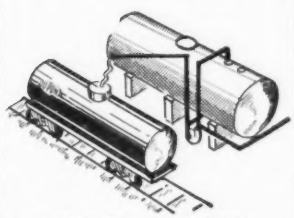
DU PONT CLOTH HEATER

is the heart of the Du Pont Continuous System. This exclusive feature permits controlled bleaching—gives automatic control of the best bleaching temperature selected for a given fabric, regardless of cloth weight or operating speed. With uniform heating, you get the uniform bleaching needed for uniform dyeing.

FOR GREATEST ECONOMY, CONSIDER:



TANK STORAGE AT THE MILL



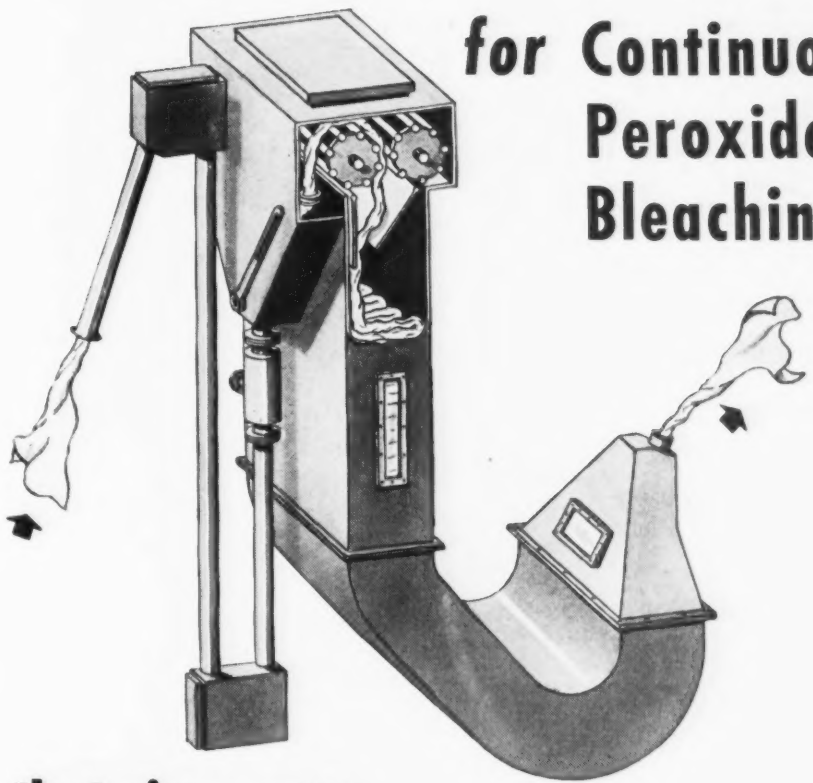
TANK CAR DELIVERIES

If you need 5000 lbs. or more of "Albone" 35 (35% Hydrogen Peroxide) per month, you'll find a storage tank installation to be economical.

SEND FOR THIS NEW BOOK!

It shows typical continuous bleach layouts designed to fit the requirements of various plants. For a copy just write: E. I. du Pont de Nemours & Co. (Inc.), Electrochemicals Department, Wilmington 98, Del.

Here's the new Du Pont high-speed J-Box for Continuous Peroxide Bleaching



that gives you:

1. **Higher bleaching speeds—limited only by washer capacity.**
2. **Improved piling mechanism—positive pulling draw reels handle cloth faster than previous designs.**
3. **Increased capacity—more cloth can be handled without increase in the size of equipment.**
4. **Reduction in floor space requirements—overall length of J-Box has been reduced by 25% or more.**

THE NEW J-Box is but one of the outstanding features found in the Du Pont Continuous Peroxide Bleaching Systems. They are readily adaptable to speedy, uniform processing . . . produce quality bleaching at lower over-all cost. In use in many leading mills, Du Pont Continuous Systems are easy to set up, operate and control . . . and they're backed up by readily available Du Pont Technical Service.

Tune in Du Pont "Cavalcade of America" Monday nights—NBC Coast to Coast

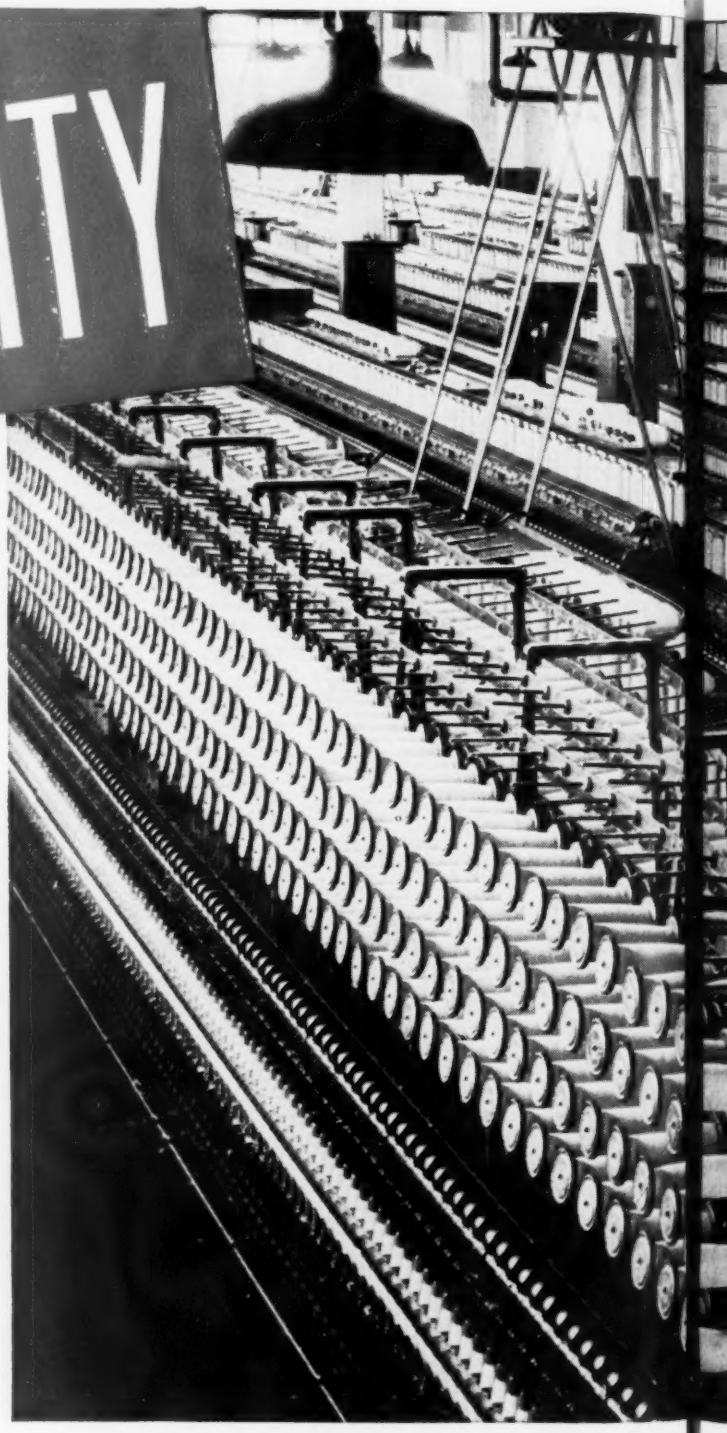
DU PONT CONTINUOUS PEROXIDE BLEACHING

DU PONT

REG. U. S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

HIGH STABILITY For Continuous



NEW OIL REDUCES WEAR AND GIVES LONGER SERVICE LIFE

Sinclair now offers new, superior LILY WHITE OILS. Practical tests on spinning frames in production show that these new oils cut bolster wear as much as two-thirds, and greatly reduce residue in spindle bases.

By virtue of basic crude treatment and compounding, the new LILY WHITE OILS AX, BX and CX reduce friction and sustain stability in use—provide resistance to thickening, fogging and gummy deposits.

As the new LILY WHITE OILS reduce friction and wear, maintenance costs go down, power costs go down and production GOES UP. LILY WHITE OILS give the operator more of everything he wants in a spindle oil.

Be sure to visit our Booth #103 at the Southern Textile Exposition in Greenville, S. C., October 4 to 9. We'd like to tell you more about our new LILY WHITE OILS.

SINCLAIR

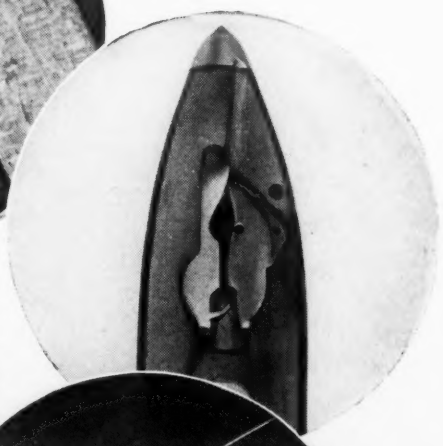
YOUR NEAREST SINCLAIR AGENT WILL GLADLY ARRANGE

LOW POWER Consumption

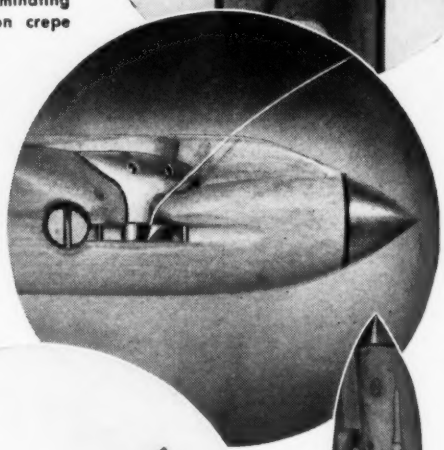
TEXTILE LUBRICANTS

FOR LUBRICATION COUNSEL, OR YOU MAY WRITE TO SINCLAIR REFINING COMPANY, 630 FIFTH AVENUE, NEW YORK 20, N. Y.

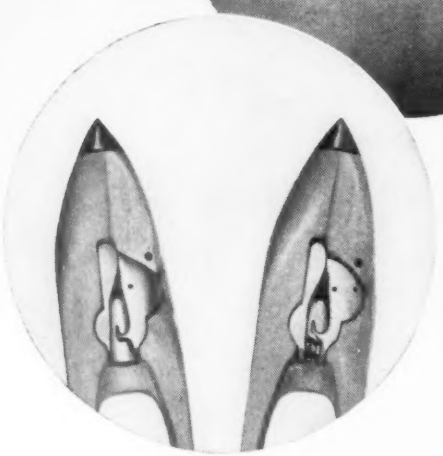
Locking Tip Sleeve which anchors tips forever and insures against loss of production time, idle looms, and costly drawing-ins.



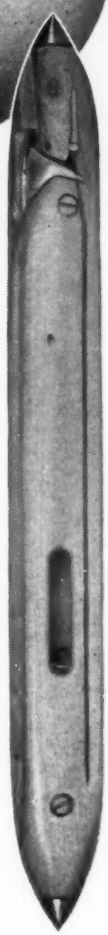
Reverse wind Rayon shuttle (S7X Center Tension Eye) holds thread in perfect alignment and constantly down in place, eliminating reverse wind rayon crepe filling troubles.



C1-41 Eye with inner hook and outside lock accelerates threading and keeps thread constantly in place.



Two-in-One Shuttles. In a matter of seconds, you can remove a regular eye and substitute the leader among all tension eyes.



Low Thread Groove Shuttle which eliminates the serious and common causes of jerkins, smutted and rubbed filling.

See

these foremost

Shuttle

improvements at the Southern Textile Exposition, Oct. 4-9

Booth #127

The name of Watson-Williams has been synonymous with quality shuttles and with leading shuttle improvements for 118 years. Watson-Williams Shuttles are recognized for fine workmanship. They are the choice of foremost woolen, cotton and silk mills over the nation for dependable operation. Visit Booth 127 at the Southern Textile Exposition, October 4 - 9 at Greenville. Give the Watson-Williams representative who calls on you an opportunity to demonstrate the five improvements shown here. See a few of the eighty odd steps in the precision manufacture of a Watson-Williams Shuttle. Meanwhile place a sample order with us for your next shuttle requirements.

WATSON-WILLIAMS MFG. CO.

MILLBURY, MASSACHUSETTS

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WATSON and DESMOND, Box 1954, Charlotte, N. C.
JOHN W. LITTLEFIELD, 810 Woodside Bldg., Greenville, S. C.
WALTER F. DABOLL, Jefferson Bldg., Greensboro, N. C.

WESTERN REPRESENTATIVE:

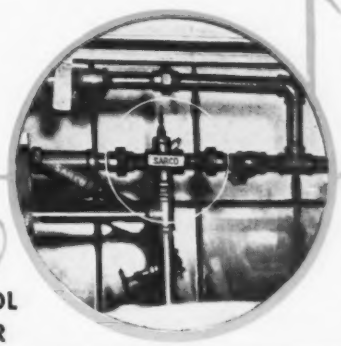
ARTHUR J. BAHAN, P. O. Box 245, La Porte, Ind.

NORTHERN REPRESENTATIVE:

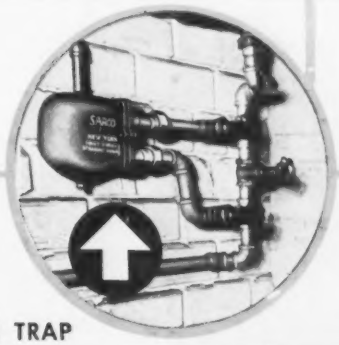
GUY C. BURBANK, 32 Beaconsfield Rd., Worcester 2, Mass.

FOR THE ANNUAL

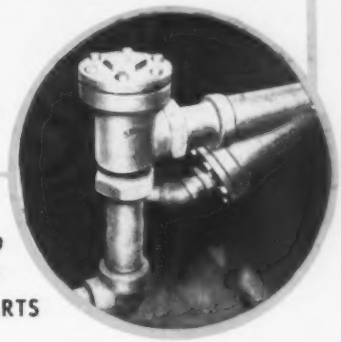
PLANT TUNE-UP



COOLING CONTROL ON COMPRESSOR



COMPRESSED AIR TRAP



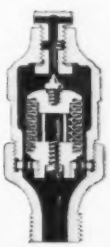
SARCO No. 9 STEAM TRAP FOR QUICK STARTS

Once a year most plant engineers "take a look" at their steam, hot water and process hook-ups. It's one thing to satisfy everybody else on performance—but it's another thing to satisfy yourself that the job is being done efficiently.

Nobody complains of too much room heat—they open the windows. If the wash water is too cold, they let it run. If process equipment "takes time to warm up" and if critical temperatures wander up and down during the day, the plant losses may not be noticed, much less reported.

There is no excuse for any of these every day inefficiencies for there are Sarco Steam Traps and Temperature Controls that will prevent these losses and pay for themselves in a few months.

And there is a Sarco Representative near you who has done these things and a hundred more in neighboring plants, similar to yours. One phone call, or a letter and the Sarco Man will be glad to "take a look" at your plant with you.



SARCO AIR VENT

SARCO TR-21 HOT WATER CONTROL

SARCO WATER BLENDER

233

SARCO

SAVES STEAM

SARCO COMPANY, INC.

Represented in Principal Cities

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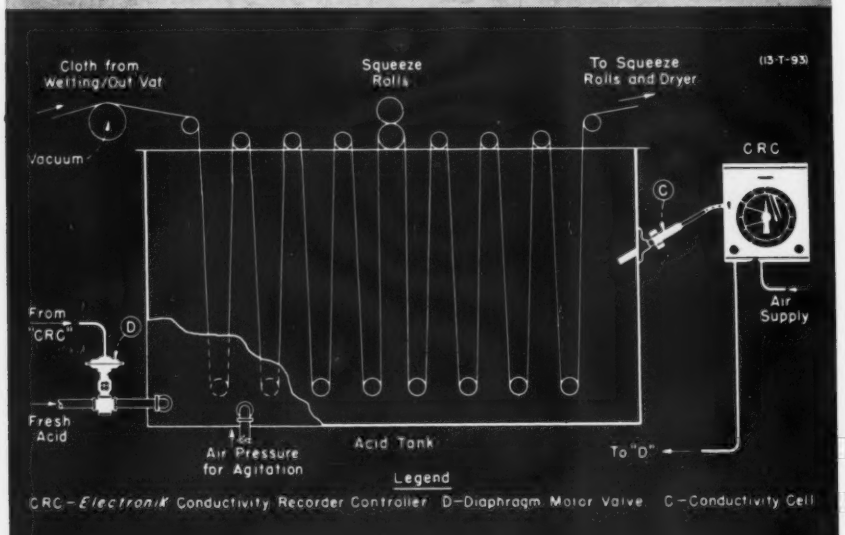
SARCO CANADA, LTD., TORONTO 5, ONTARIO

Assures Complete WOOL CARBONIZING



The Brown Conductivity Control System

Modern wool carbonizing is particularly dependent upon concentration control of the acid bath in order to achieve consistent results of the highest quality.

The Brown Conductivity Control System is simplicity itself. As shown in the diagram, a conductivity cell is immersed in the bath having an acid concentration dependent upon the weight and type of goods being treated. The *ElectroniK* instrument measures the conductivity of the solution and regulates the position of the fresh acid valve to deliver the required amount of make-up to the bath.

Per cent of acid concentration is a critical point in wool carbonizing. The Brown *ElectroniK* Conductivity Controller holds concentration exactly where it should be—constantly, unfailingly—resulting in uniform removal of all vegetable matter from the cloth.

Brown ElectroniK Conductivity Controller

The Brown Instrument Division provides a full line of Control Instruments for Textile Processes. Specialists having a thorough knowledge of field requirements are located in all textile centers. Call on them to help solve your processing problems. Send for Catalog 9305.

THE BROWN INSTRUMENT COMPANY
4509 Wayne Ave., Philadelphia 44, Pa.

DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR CO.

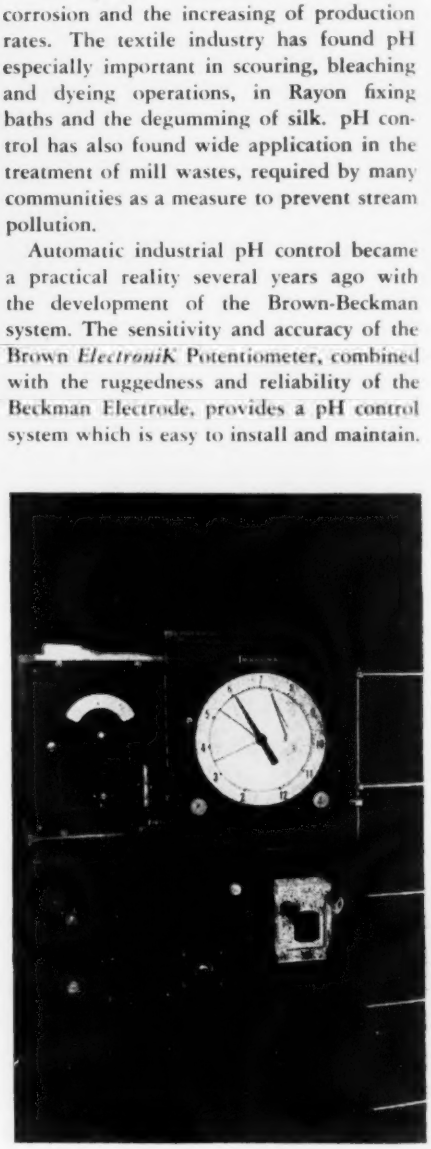
Offices in principal cities of the United States, Canada and throughout the world.

BROWN *Advanced Instrumentation* **FOR BETTER PROCESSING**
Product of MINNEAPOLIS **Honeywell**

pH Control Invaluable in Processing

Textile overseers are becoming increasingly conscious of the value of pH measurement and control as a means of reducing production costs, improving product quality and decreasing rejects and wastes. Further advantages of automatic pH control lie in the conservation of reagents, improvement of product uniformity, reduction of corrosion and the increasing of production rates. The textile industry has found pH especially important in scouring, bleaching and dyeing operations, in Rayon fixing baths and the degumming of silk. pH control has also found wide application in the treatment of mill wastes, required by many communities as a measure to prevent stream pollution.

Automatic industrial pH control became a practical reality several years ago with the development of the Brown-Beckman system. The sensitivity and accuracy of the Brown *ElectroniK* Potentiometer, combined with the ruggedness and reliability of the Beckman Electrode, provides a pH control system which is easy to install and maintain.



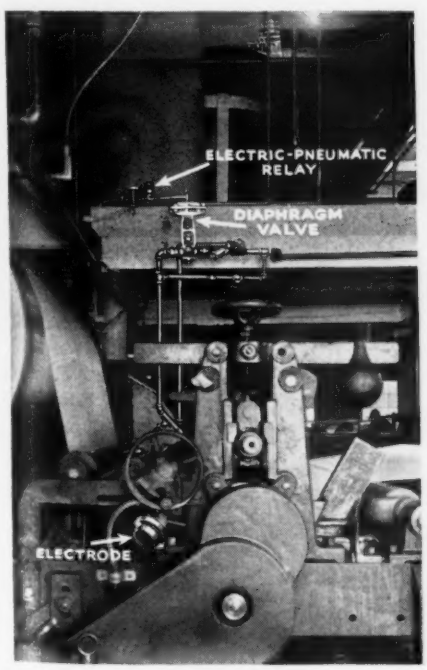
A Typical pH Control Panel

The increasing dependence of all industry upon the continuous recording and automatic control of all critical variables has brought an attendant and considerable increase in the use of pH instruments. The employment of permanently installed pH recorders and controllers in increasing numbers has come with the rising awareness of the dependability of modern pH instrumentation for industrial service.

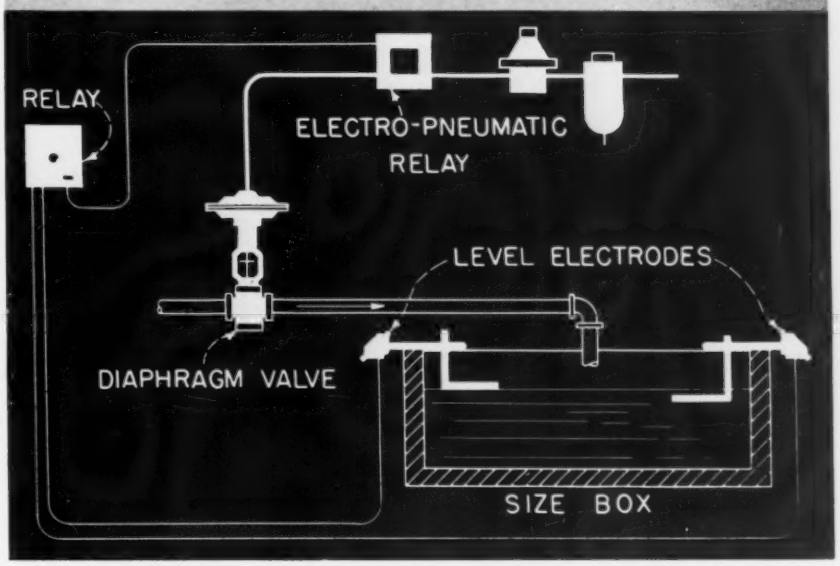
Electronic Control Feature at Textile Exposition

In Booths 420, 421 and 422 the Brown Instrument Division of Minneapolis-Honeywell will show a new Circular Chart *Moist-O-Graph* based on an electronic principle, for moisture regain control on cotton slashers, at the Southern Textile Exposition, Greenville, S. C., October 4th to 9th.

Also on display will be a number of other instruments that are daily contributing to efficient and economical textile mill operation. Included are a Pneumatic Time-Temperature Controller and a simple Recording Control Thermometer for size cooking and dyeing control; a Thermometer with built-in timer and signal lamp for Kier boiling control; a Wet and Dry Bulb Recording Thermometer Controller for dryers; a Controller for steam and wash water flow in continuous bleach systems; a Recording and Integrating Flow Meter for steam cost accounting; a portable Thermometer and Hair Hygrometer for air conditioning systems; two Electrode Assemblies and Relay for size box level control (illustrated below in a typical application); a non-indicating Electric Temperature Controller and a non-indicating Pneumatic Temperature Controller; an Indicating Pressure Controller for cylinder pressure control; a circular chart *ElectroniK* Controller for temperature control in the continuous bleach range and for drying and pH control.



Holds SIZE BOX LEVEL Constant



Brown Size Level Control System

Fluctuation in the level of the sizing solution can result in defective warps. With the level *automatically controlled*, yarn immersion time is kept uniform throughout slasher operation, and yarn saturation and fiber coating are standardized.

Relay

The Brown Size Level Control System utilizes the conductivity of the size solution for its operation. Two stainless steel electrodes, adjustable to any desired level in the size box, provide electrical contact with the solution. In operation, when the solution falls below the desired level, the electrodes cause a relay to operate. This action is transmitted to an electric-pneumatic relay which changes the air pressure on a diaphragm valve. The valve then opens and allows size solution to flow until the level reaches the upper electrode. At this point opposite action occurs and the flow is shut off at the inlet.

The Brown Size Level Control System is unaffected by size temperature, turbulence or atmospheric conditions. Being fully automatic it eliminates guess work and assures uniform sizing with accuracy and dependability. Hundreds are in daily use.

Electro-Pneumatic Relay

Brown engineers at Atlanta, Charlotte, Boston and Philadelphia are as near as your telephone. Call them or write.

THE BROWN INSTRUMENT COMPANY
4509 Wayne Ave., Philadelphia 44, Pa.

DIVISION OF
MINNEAPOLIS-HONEYWELL REGULATOR CO.

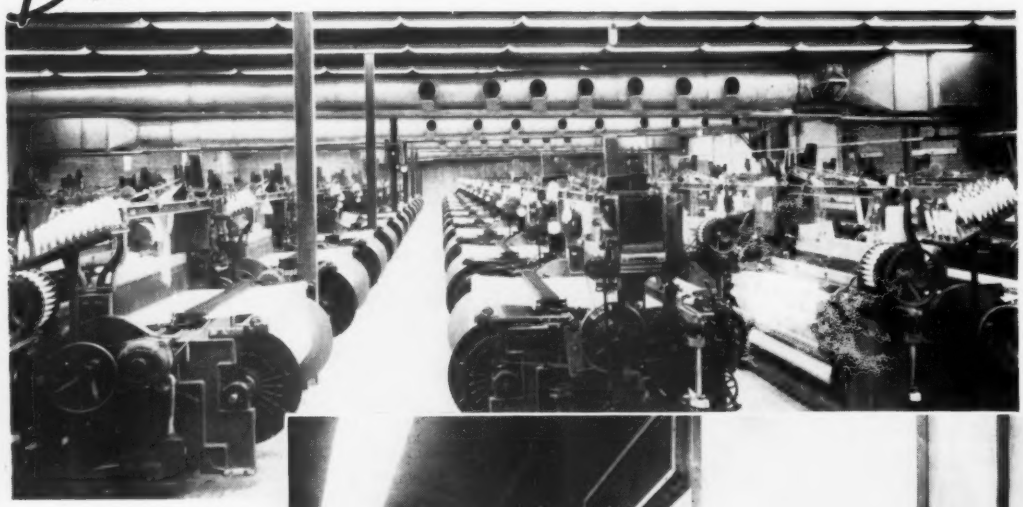
Offices in principal cities of the United States, Canada and throughout the world.

BROWN *Advanced Instrumentation* FOR BETTER PROCESSING

Product of MINNEAPOLIS Honeywell

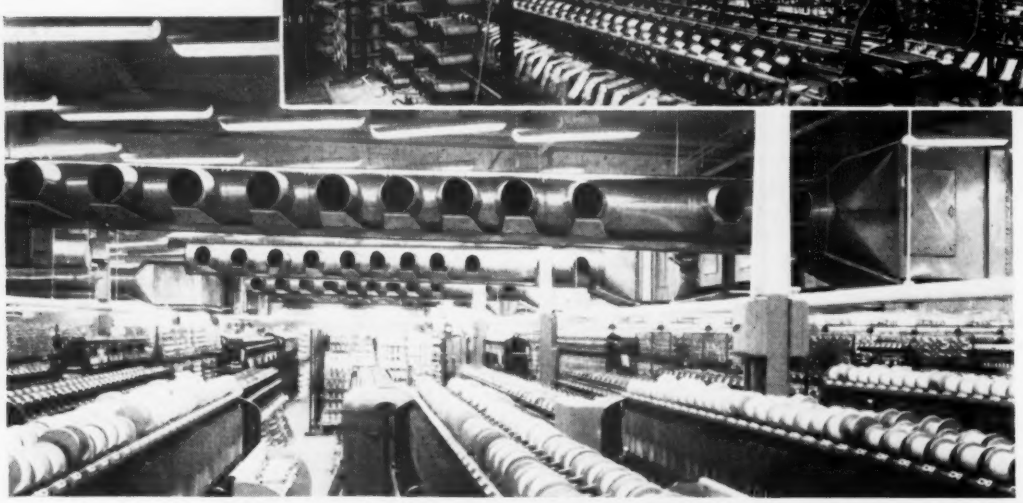
Bahnson

AIR CONDITIONING CONTRIBUTES TO SUPERIOR QUALITY OF PRODUCT



Bahnson Humiduct Air Conditioning System using stainless steel distribution ducts for controlled conditions in the rayon weaving department of Robbins Cloth Mill, Red Springs, N. C.

Bahnson Central Station Air Conditioning System provides controlled conditions in rayon preparatory department of Robbins Cloth Mill, Robbins, N. C.



Bahnson Stainless Steel Humiduct Air Conditioning System with eliminators to deliver saturated air for controlled conditions in rayon throwing department of Robbins Cloth Mill, Robbins, N. C.

S. C. STIMSON
A-3 VIRGINIAN APTS.
GREENVILLE, S. C.

I. L. BROWN
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ATLANTA, GEORGIA

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Bahnson System
POSITIVE CIRCULATION
LOWER OPERATING COST
AIR CONDITIONING ENGINEERS
THE BAHNSON CO WINSTON-SALEM, N. C.

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DEWITT CLARK
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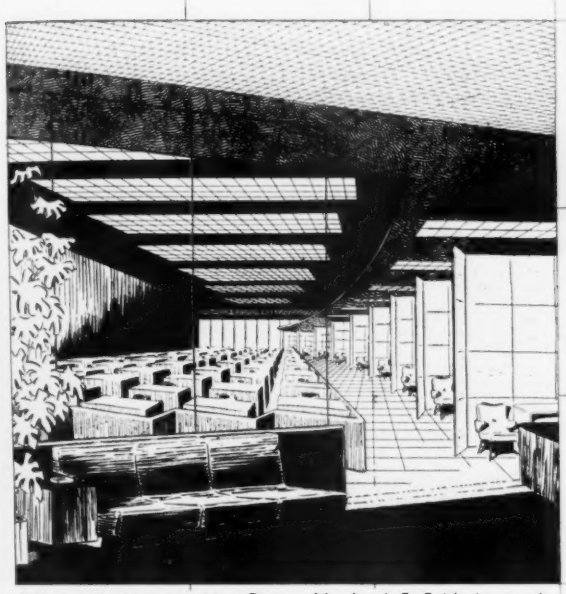
LOS ANGELES 13, CAL.

Unlimited patterns of light from one system of lighting— CEILINGS UNLIMITED*



Office — Architects Van Doren, Nowland & Schladermundt

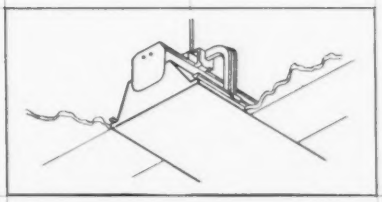
Good light . . . PLUS! Modernization of old interiors. Structural harmony in new construction. Simply by installing the units making up Miller Fluorescent Troffer Lighting Systems (versatility of application is boundless) in lines or blocks to form the ceiling pattern you desire. Good light . . . plus CEILINGS UNLIMITED.

Miller Lighting Service is all-inclusive. It covers the needs of planned Commercial and Industrial Lighting.

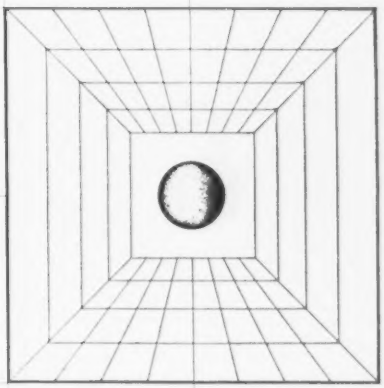
Miller 50 and 100 Foot Candlers (Continuous Wireway Fluorescent Lighting Systems) are standard for general factory lighting. Miller incandescent and mercury vapor reflector equipment has broad factory and commercial application.

Miller field engineers and distributors, conveniently located, are at your call.

* Reg. Trademark U.S. Pat. Off.



Miller Ceiling Furring Hanger (patented) simplifies installation. Continuous wireway cuts wiring and fitting costs. Units Bonderized, rust-resistant. Accessible parts . . . easy service.



Chermayeff.

THE miller COMPANY
SINCE 1844
ILLUMINATING DIVISION, MERIDEN, CONNECTICUT

ILLUMINATING DIVISION: Fluorescent, Incandescent, Mercury Lighting Equipment. HEATING PRODUCTS DIVISION: Domestic Oil Burners and Liquid Fuel Devices. ROLLING MILL DIVISION: Phosphor Bronze and Brass in Sheets, Strips and Rolls

5

KEY TO MORE *Unit Responsibility*

Here's proof of the value of unit responsibility! This modern weave room produces the highest quality product . . . most efficiently. Westinghouse planned engineering provides individual drives and controls, uniform illumination, and Precipitron, the electronic air cleaner that provides clean, pure air.

"FROM OPENING TO FINISHING... ELECTRICAL AND POWER EQUIPMENT DESIGNED FOR EACH JOB"

The economical application of Westinghouse apparatus and electric power to textile mills has given the industry a new conception of speed, economy . . . *and* an improved product.

Whether it's a single motor drive, a complete power system, an individual lamp, or an entire lighting program . . . you need only contact one organization for your complete electrical requirements. From the start, Westinghouse has maintained a complete, separate Textile Department, staffed by competent engineers. These men are on the job full time producing better power equipment, and more efficient methods of applying, distributing, controlling and utilizing electric power for textile mills.

All this knowledge is yours for the asking . . . at Westinghouse. You'll get a speedy, accurate and simple solution to your textile problem.

Call your nearest Westinghouse office or write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-94755

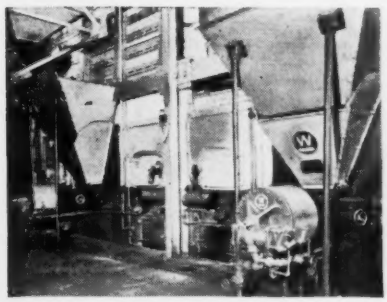
PRODUCTIVE POWER

"WESTINGHOUSE-EQUIPPED THROUGHOUT" MEANS SIMPLIFIED ORDERING, QUICKER INSTALLATION, MORE EFFICIENT OPERATION

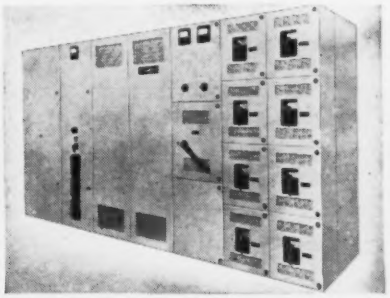
Putting power to work *productively* can be a major problem—or a simple one. When items must be selected, ordered and received from many sources, it means many chances for costly errors and delays . . . divided responsibility—or none at all—for performance of installed equipment.

Westinghouse offers the way to simplify the job. From equipment for generation of electrical or steam power, to the most specialized types of drives and control for its utilization, Westinghouse provides a single source of supply . . . one broad pair of shoulders competent to take responsibility for performance of all parts of the job.

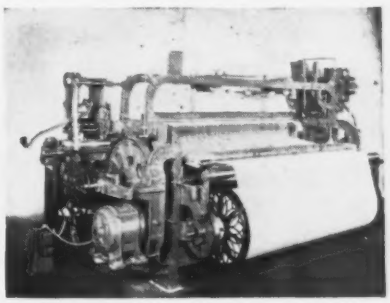
Here are a few of the places where Westinghouse unit responsibility prevents headaches . . . saves money . . . assures *more productive* power:



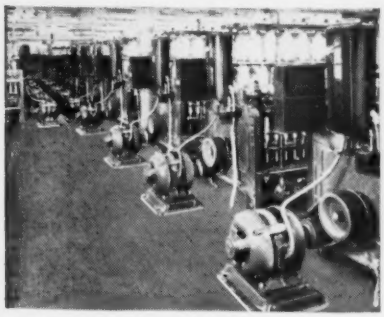
STOKERS—Ability to burn cheaper grades of fuel, and to eliminate smoke nuisance are two outstanding advantages of Westinghouse "Link-Grate" Stokers. These stokers fire the boilers supplying power and process steam in a New York textile mill.



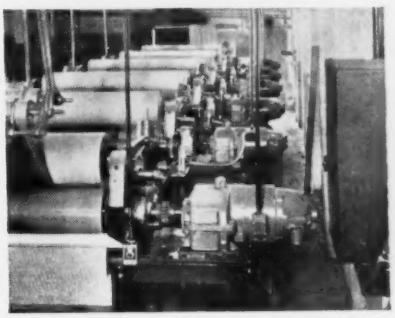
SWITCHGEAR—Westinghouse supplies a wide range of "Unitized" metal-clad switchgear that permits quick, economical installation. Unit shown contains a 750-kva air-cooled transformer, high-voltage metal-clad air breaker, and draw-out, low-voltage air circuit breakers.



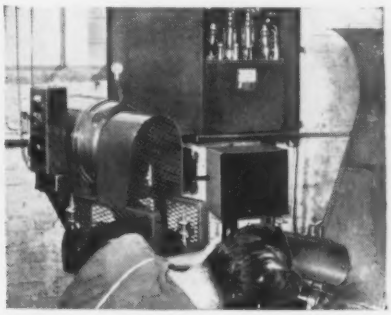
LOOM MOTORS—Westinghouse Loom Motors give maximum production with a minimum of power. Shown is a "weave room tested", specially-designed Westinghouse 1-1/2 hp loom motor driving a modern woolen and worsted loom.



LINT-FREE MOTORS—Installation of spinning frames, driven individually by Westinghouse Lint-Free Motors and controls. They're specially designed to provide the "cleanest running textile motor available".



GEARMOTORS—Westinghouse Gearmotors greatly facilitate the application of power for machines with slow-speed input shafts. Illustrated is a range drive, powered by Westinghouse Gearmotors.



MOT-O-TROL—This flexible electronic control solves any control problem requiring wide-range stepless speeds and close automatic regulation at all speeds and varying loads.

LIGHTING—Modern fluorescent lighting provides maximum "see-ability" in this textile mill. Westinghouse "planned lighting" is added proof of the value of single-source responsibility.

Westinghouse

PLANTS IN 25 CITIES . . . OFFICES EVERYWHERE

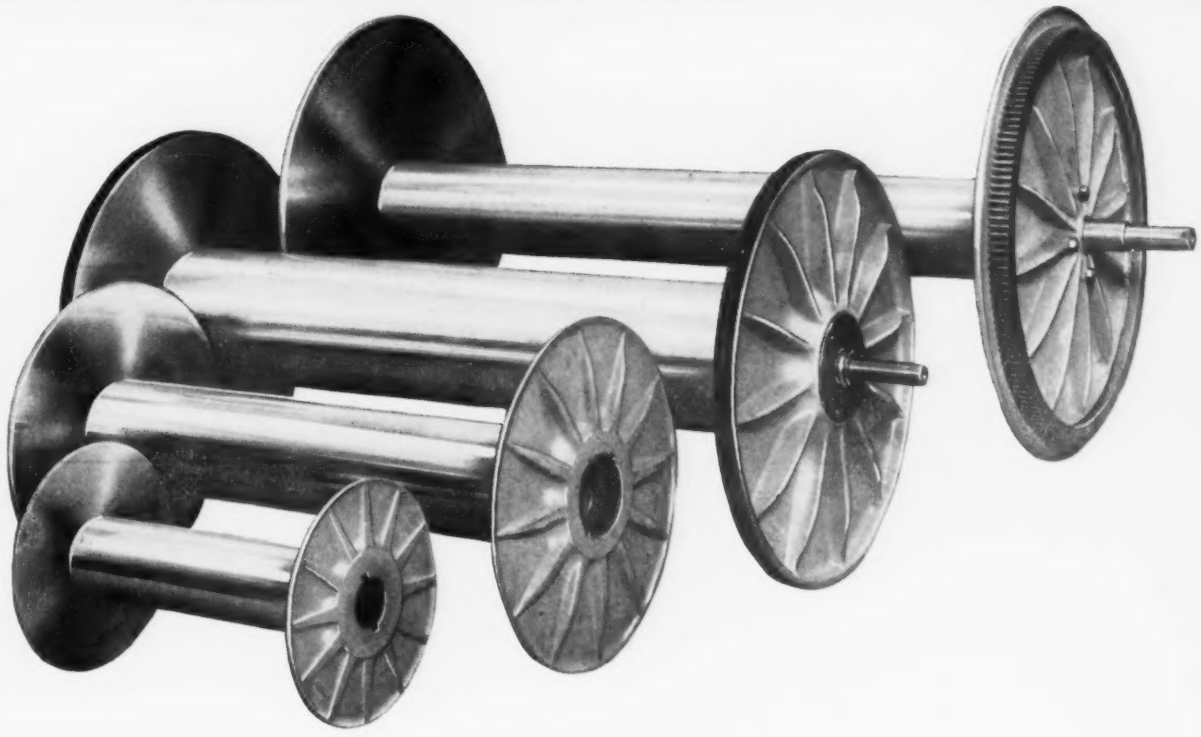
MORE PRODUCTIVE POWER FOR INDUSTRY

Many cotton mills have found it profitable to consult Corn Products textile laboratory at Greenville, South Carolina.

The services of our technicians are offered textile manufacturers without obligation.

CORN PRODUCTS SALES COMPANY

Greenville, S. C. • Greensboro, N. C. • Atlanta, Ga.



Hayes Offers a Complete Line of Light Metal Textile Beams In Standard Sizes

Let Hayes accurate, precision-built aluminum or magnesium beams reduce costs and down-time in your mill.

These well-balanced Section and Tricot beams run at high speed, do not warp and have practically no spread of heads—and are *half the weight of wood and steel beams.*

The use of Hayes large or regular size, light weight, polished, aluminum, true-running, rust-proof Loom beams contribute to better weaves, less rejects and fewer stops.

A 32" diameter head beam gives you 80% more yarn capacity than a 24" diameter beam.

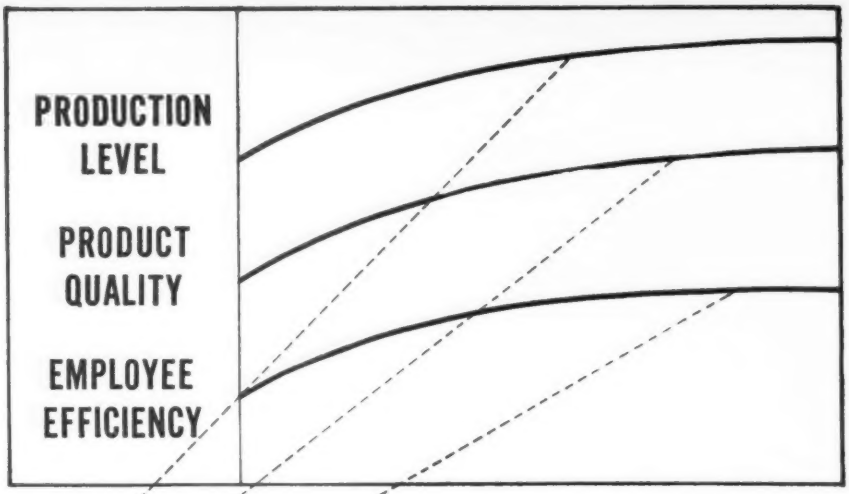
We now offer this new type, well designed, and expertly manufactured textile equipment at astonishingly low prices. Prompt delivery.

Write, phone or wire your requirements

Visit our exhibit
Number 350 Balcony
Southern Textile Exposition
Greenville, South Carolina

HAYES INDUSTRIES, INC.

JACKSON, MICHIGAN, U. S. A.



THE INVISIBLE SECURITY OF AIR CONDITIONING GIVES YOU RESULTS YOU CAN SEE

Absolute temperature and humidity control in your plant will give you results you can *see—in high level production . . . uniform quality of products . . . and improved employee efficiency.*

Every year more and more mills are recognizing the downright economic necessity of air conditioning . . . are depending on York for installations which assure them year 'round operation at a minimum of expense and attention.

Regardless of the size of the mill or the special problems involved, there's a complete range of York equipment to meet every specification. Since 1885, York has been the foremost name in mechanical cooling, and York central station installations are in operation in many of the country's largest and most modern textile plants.

And, whatever your specific needs in air conditioning, there's a complete range of York equipment to meet them, and a York representative ready to talk textile installations. He is prepared to supply your plant engineer, consulting engineer and installing contractor with specific information as to equipment—its capacities and performance to fit your special needs. His accumulated data on air conditioning in your particular field will be helpful. York Corporation, York, Pennsylvania

YORK *Refrigeration and Air Conditioning*

HEADQUARTERS FOR MECHANICAL COOLING SINCE 1885

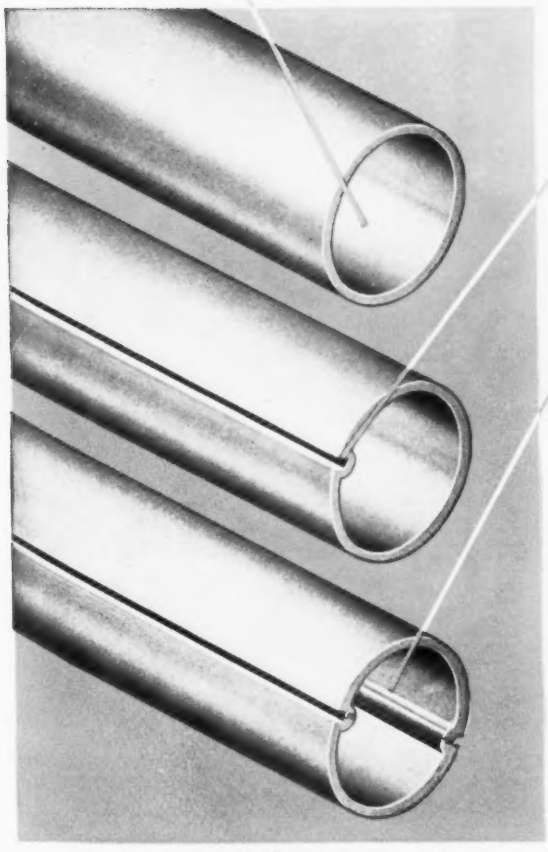
NEW LIFE for Loom Beams

3 Types of Reynolds High-Strength, Heat-Treated Extruded Aluminum Barrels Available for Rebuilding Your Loom Beams

1 Barrels of plain round extruded aluminum tubing. Most economical where starting slot is not needed.

2 One-piece extruded aluminum barrel with grooved starting slot. Ask for Reynolds Standard Extruded Section T-414.

3 Aluminum barrel composed of two dovetailed extruded sections. Can be furnished completely assembled if desired, or you can assemble the halves yourself if you prefer. Because of simplified fabrication, this strong and sturdy barrel is more economical than the one-piece section, Type 2. Ask for Reynolds Standard Extruded Section T-630.



HERE are long-lived, lightweight barrels of Reynolds Aluminum in a choice of three designs to fit both your pocketbook and specific production needs. And regardless of the type selected, you are assured of these basic benefits: Barrels of Reynolds Aluminum . . .

retain a smooth finish throughout their long life—
can't warp or splinter—
are unaffected by moisture—
eliminate warp stains due to rust or corrosion—
resist grooving or crushing from pressures of synthetic yarns—
are lightweight for easy handling, yet possess ample strength to withstand rough treatment and frequent stacking.

Start planning your loom beam rebuilding program now. If you are not equipped to rebuild your loom beams, Reynolds will be glad to recommend competent shops for such rebuilding. A few Reynolds Aluminum barrels put to the test will prove their many advantages over wood or steel conclusively. Write us for further information and recommendations as to the type of barrel best suited to your needs. Reynolds Metals Company, Aluminum Division, Louisville 1, Kentucky.

Address all inquiries to Industrial Machinery Division, Reynolds Metals Company, 310 Hanna Building, Cleveland 15, Ohio.

See these and other aluminum extrusions for the Textile Industry at the 15th Southern Textile Exposition, Greenville, S. C. October 4-9

REYNOLDS *Lifetime* ALUMINUM

REYNOLDS PIONEERING MADE ALUMINUM COMPETITIVE . . . TAKE ADVANTAGE OF IT!

In Twister Rooms it's NON-FLUID OIL ...

for fewer broken ends!

Most leading yarn and thread mills find that NON-FLUID OIL insures greater production from twister frames by keeping them in constant operation.

By reducing traveler friction, NON-FLUID OIL cuts down the number of broken ends, eliminates overstrain on yarn and does away with much blackened yarn. Result—more even operation with cleaner yarn of better quality at lower production cost.

Write for Bulletin T16TW and free, testing sample of NON-FLUID OIL.

NEW YORK & NEW JERSEY LUBRICANT CO.

292 Madison Avenue **New York 17, N. Y.**

Southern District Manager: FALLS L. THOMASON, Charlotte, N. C.
WAREHOUSES: Charlotte, N. C. — Greenville, S. C. — Atlanta, Ga. — Providence, R. I. — Detroit, Mich. — Chicago, Ill. — St. Louis, Mo. WORKS: Newark, N. J.

NON-FLUID OIL is not the name of a general class of lubricants, but a specific product of our manufacture. So-called fluid grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

NON-FLUID OIL
TRADE MARK REGISTERED

ALSIMAG GUIDES

TRADE MARK REGISTERED U.S. PATENT OFFICE

solve full fashioned problems, too

The records of Alsimag Thread Guides in other textile applications resulted in the adoption of Alsimag guides by full fashioned hosiery manufacturers.

Monofilaments accented guide problems in full fashioned mills. Alert production men found the answer in Alsimag Thread Guides.

Mill after mill adopted Alsimag guides for more and more uses. Here are the reasons:

EXTREMELY LONG LIFE. Alsimag guides are hard. Alsimag 192 and 193 are 8 on Mohs' scale. Alsimag 491 is 9. The result is extremely long life even under high speeds and tensions.

HOMOGENIETY. Alsimag guides are the same all the way through. There is no surface "skin" to wear through. Gradual wear simply reveals new surfaces of the same character. Thus there is no point of sudden failure, no losses due to chafed yarn from undetected guide failure.

SUSTAINED, HIGH SPEED PRODUCTION. Alsimag guides permit full speed production—in some instances have permitted dramatic increases in speeds. Since Alsimag guides last so long they seldom have to be changed. Their strength and uniformity facilitate changes, reduce down time.

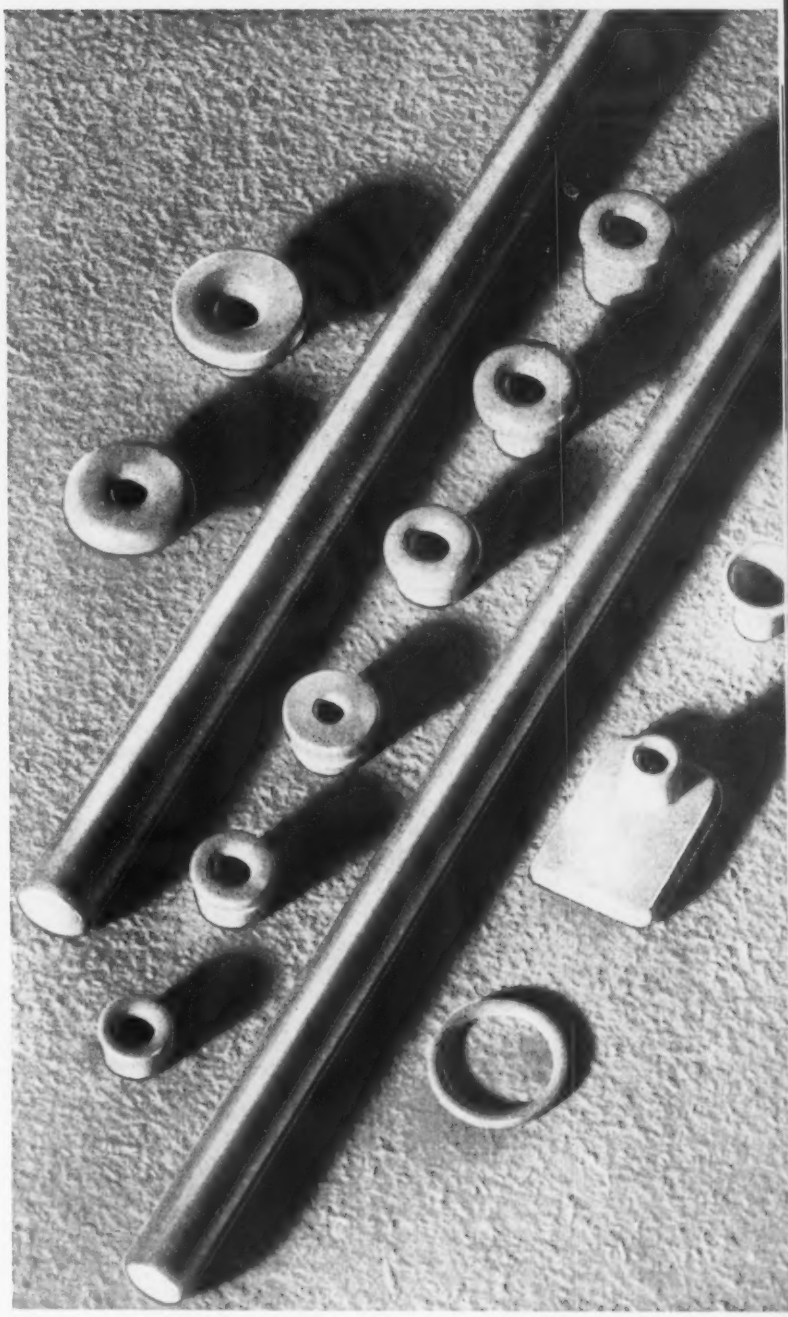
CONTROLLED FINISHES. Alsimag guides are available in mat, smooth or highly polished finishes. This aids in the control of tensions.

UNIFORMITY. Alsimag guides show little if any variation in size or characteristics from one guide to the next, from one lot to the other.

CUSTOM MADE. Alsimag guides are custom made for the specific application. Thus you fit the guide to the conditions of use instead of adjusting the use to the limitations of the guide.

SAMPLES. Standard test rods and tubes furnished free. Custom made samples at reasonable cost.

LET YOUR OWN RECORDS TELL YOU. We recommend tests of Alsimag guides in your plant. Let your own records establish the superior performance and lower cost of Alsimag guides. We will be glad to cooperate in developing the most satisfactory guide for your specific requirements.



THREAD GUIDES ILLUSTRATED APPROXIMATELY TWICE SIZE

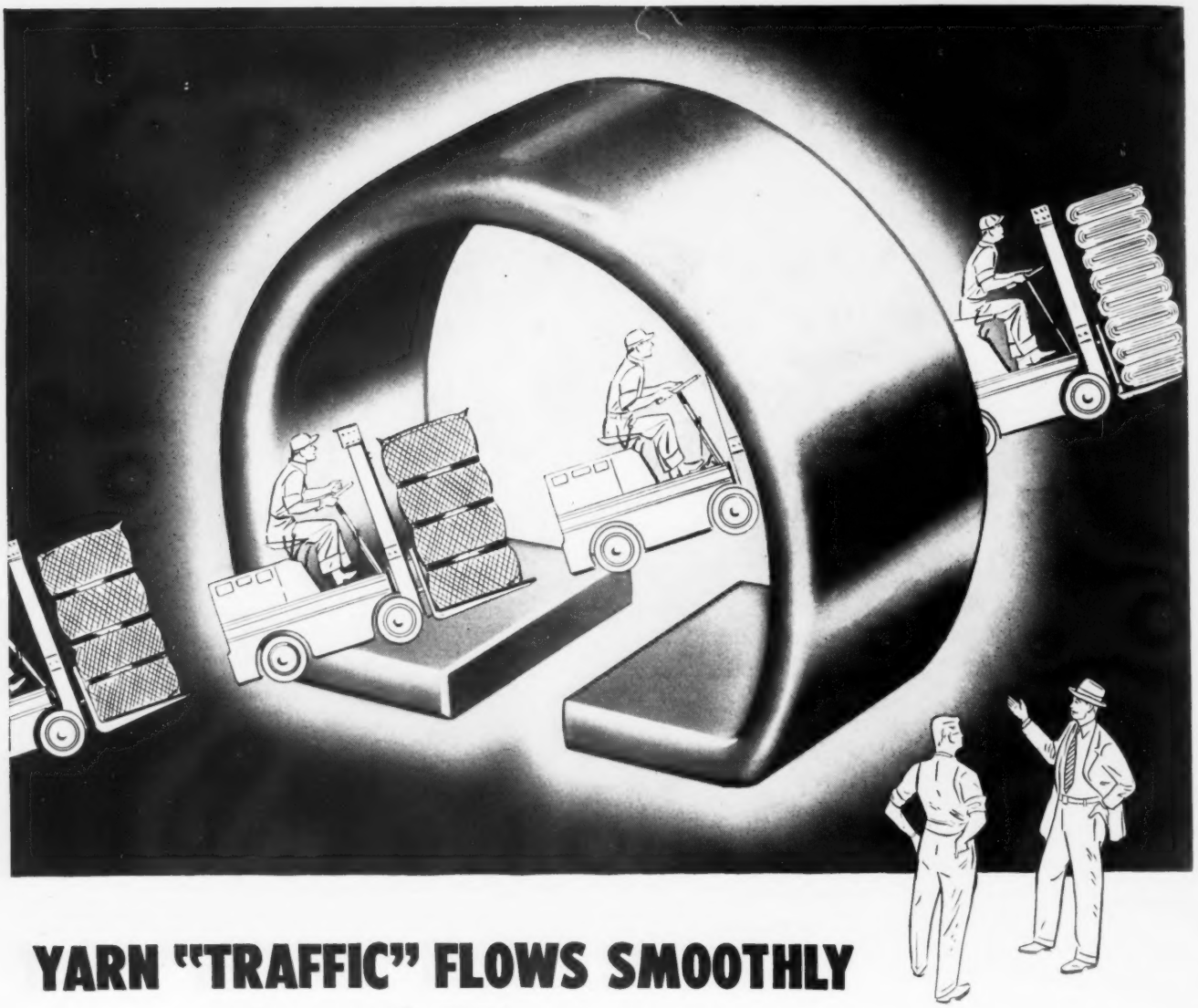
47TH YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

SALES OFFICES: ST. LOUIS, MO., 1123 Washington Ave., Tel: Garfield 4959 • NEWARK, N. J., 671 Broad St., Tel: Mitchell 2-8159 • CAMBRIDGE, Mass., 38-B Brattle St., Tel: Kirkland 4498 • CHICAGO, 9 S. Clinton St., Tel: Central 1721 • LOS ANGELES, 324 N. San Pedro St., Tel: Mutual 9079 • PHILADELPHIA, 1649 N. Broad St.

FREE SAMPLES AVAILABLE AT BOOTH 343, SOUTHERN TEXTILE EXPOSITION, GREENVILLE, S. C.



YARN "TRAFFIC" FLOWS SMOOTHLY

. . . through Victors

SINCE MOST MILLS' entire output passes through travelers — whether yarn traffic is speeded or stalled depends on your selection.

Which are your travelers — bottlenecks or broad highways? Assuming equipment is in proper condition, if the traveler is **wrong**, the flow of work through the mill will be slowed up at the spinning or twisting, production will lag, quality will suffer, and profits will sag. If the traveler is **right**, you can meet output schedules, cut down waste, and upgrade quality.

With the many new developments in synthetics and blends, it is becoming more and more difficult to be sure the traveler you use is **right** for the job. To save valuable time in setting up the smooth-running spinning and twisting you want, you need up-to-the-minute information.

There's a man near you who knows what you want to know about choosing travelers. He's the Victor Service Engineer and his job is to keep abreast of every new development. He will help you select the **right** traveler for any fiber, any blend you may be running. Write, wire, or phone the nearest Victor office for prompt service.

Keep a Step ahead with

VICTOR Ring Travelers

VICTOR RING TRAVELER COMPANY

PROVIDENCE, R. I. . . . . 20 Mathewson St. . . . . Tel. Dexter 0737

GASTONIA, N. C. . . . . 358-364 West Main Ave. . . . . Tel. 247

Vat COLORS for rayons

The stabilized rayons now available make fast colors a "must" for customer satisfaction. Du Pont Ponsol* and Leucosol* . . . anthraquinone-type dyes . . . and Sulfanthrene* . . . thioindigoid and related dyes . . . produce superior light and wet fastness on rayons.

Du Pont Continuous Pad Steam method is an excellent way to produce a wide range of attractive shades of outstanding fastness and uniformity.

Investigate the selection and application of these dyes. Our Technical Staff will be glad to help you.

E. I. du Pont de Nemours & Co. (Inc.), Dyestuffs Div., Wilmington 98, Del.

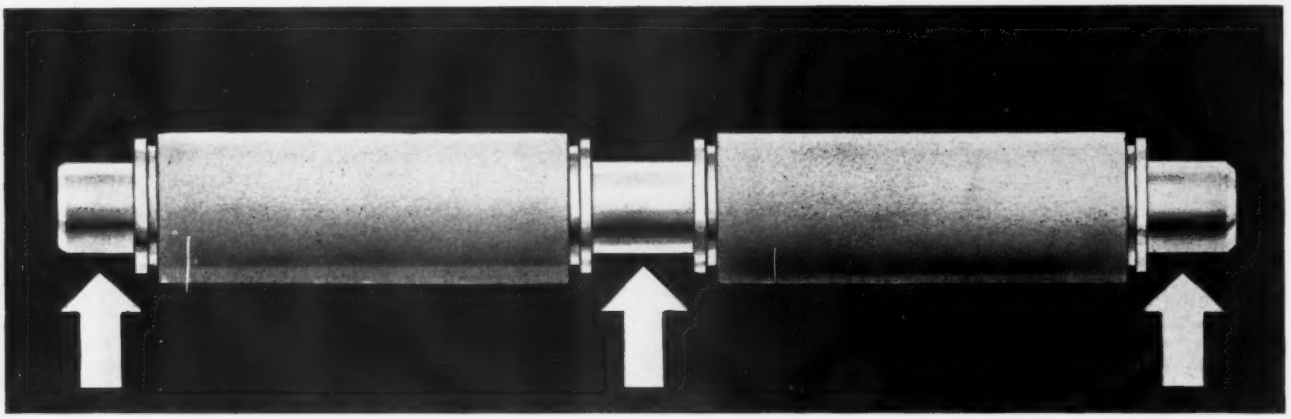
*REG. U. S. PAT. OFF.

Du Pont Dyestuffs

DU PONT
REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

THE IDEAL "Flow-Steel" METHOD



INCREASES TOP ROLL EFFICIENCY 3 WAYS

1 REDUCES WEAR CAUSED BY FRICTION

The Ideal "Flow-Steel" method of reconditioning top rolls with an oil retaining steel instead of cast iron has reduced friction to the vanishing point . . . often doubling the life of the top roll.

2 ELIMINATES FREQUENT OILING

A survey among mills now using Ideal's "Flow-Steel" reconditioned top rolls indicates that daily, or even weekly, oilings are no longer necessary. Many mills report they run smoothly several months without oiling.

3 REDUCES SECONDS CAUSED BY OIL SPOTS

The oil-retaining steel used in the Ideal "Flow-Steel" method and the long intervals between oilings make seconds due to oil-spotting negligible.

JUST CLIP AND MAIL

Dept. W-1
Ideal Machine Shops, Inc.
Bessemer City, North Carolina

Please send information on the Ideal "Flow-Steel" method of reconditioning top rolls.

Company Name .....

Address .....

Your Name .....

For Complete Information
Mail Coupon Today

IDEAL MACHINE SHOPS

INCORPORATED

BESSEMER CITY, NORTH CAROLINA

24TH YEAR OF CONTINUOUS SERVICE TO TEXTILE MILLS

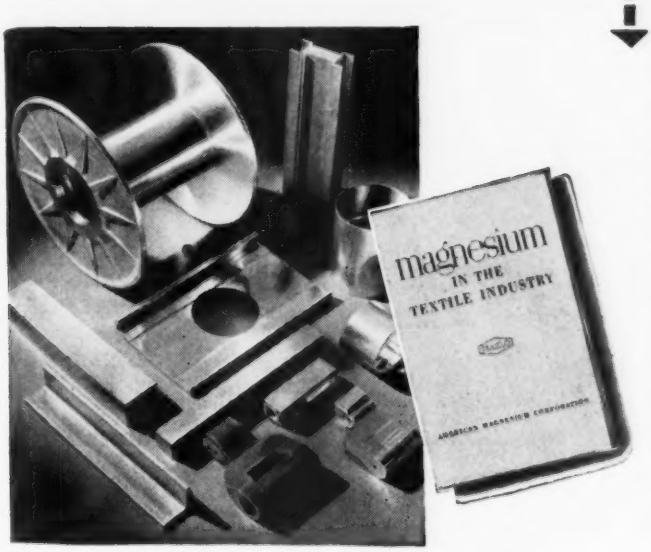
STOP

Just a little ice cube that stopped — suddenly — when it hit her on the head, was enough to knock a St. Louis girl unconscious, recently. The ice cube had fallen from a hotel room window.

START

A hitter uses more force to break toward first base than he does for any other step around the bases — because he has to use a lot of force overcoming his own inertia.

MORAL: It takes a lot of power to stop something that's moving fast, or start something that's stopped. In equipment as full of stops and starts as high-speed, reciprocating parts of textile machinery, you save a lot of wear—a lot of vibration—a lot of power—when those parts are American Magnesium. 35% lighter than aluminum, 75% lighter than steel, it saves power, cuts vibration, limits wear. Corrosion-resistant and non-warping. Ask your builder to specify it, wherever possible, for better performance. ALUMINUM COMPANY OF AMERICA, sales agent for American Magnesium products, 1705 Gulf Building, Pittsburgh, Pennsylvania. Sales offices in principal cities.



FREE! Get your free copy of "Magnesium in the Textile Industry" for full information on how American Magnesium can help you cut costs.

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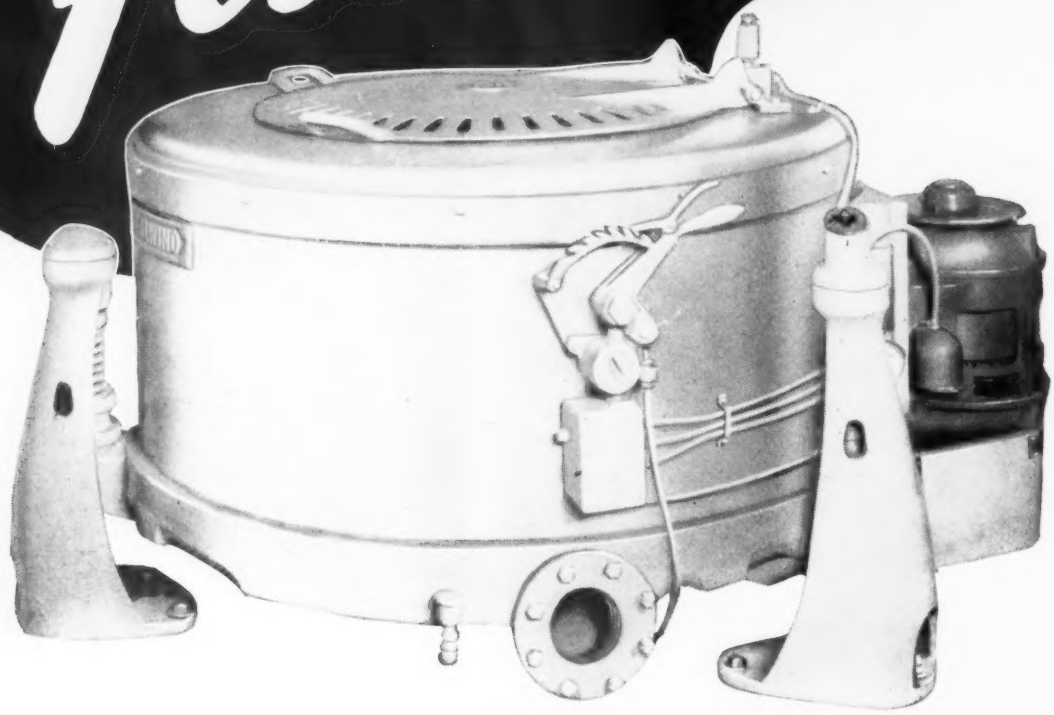

WHIRLWIND EXTRACTORS

Widely used and recommended . . . throughout the industry . . . for its ruggedness and dependability, Fletcher "WHIRLWIND"—the only extractor with automatic hydraulic brake and "finger tip" control. This most modern type of high-speed extractor has large capacity, unusual self-balancing, all-around performance, ready accessibility around the basket and requires no heavy foundation.

For increased production; fast, thorough extraction; and smooth, safe stops . . . investigate the Fletcher "WHIRLWIND." Write for bulletin . . . engineering consultation available without obligation.

When at the Southern Textile Exposition in Greenville . . . be sure to stop in and see the Fletcher Extractor Exhibit. We will be located in Section #124.

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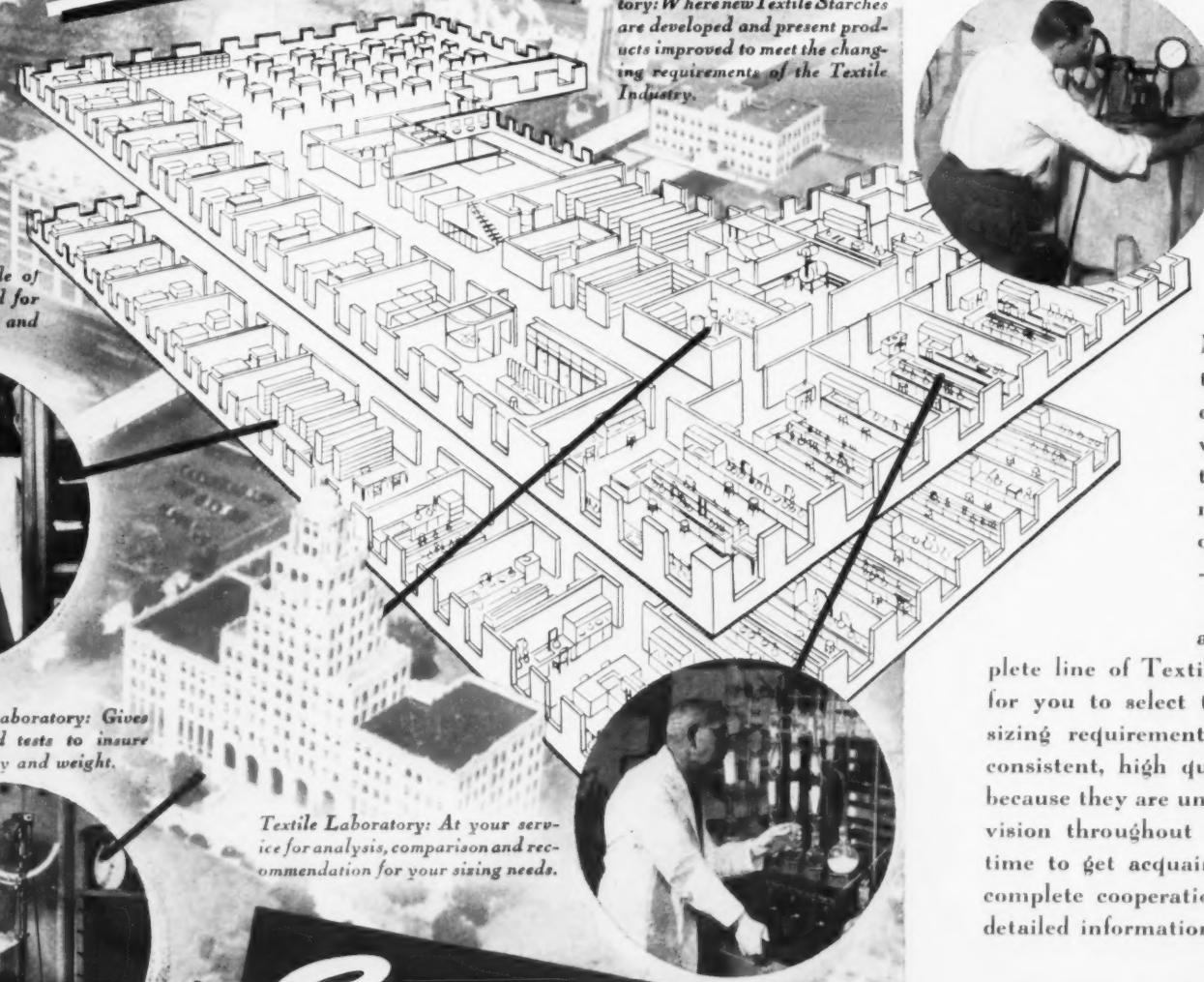
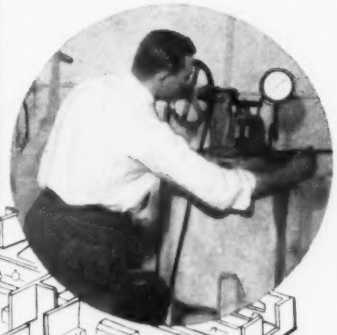


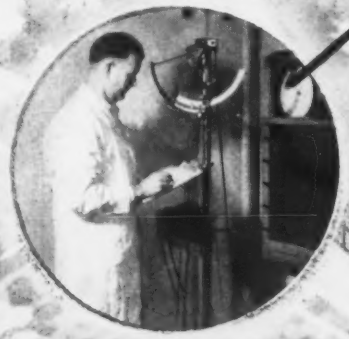
Product Development Laboratory: Where new Textile Starches are developed and present products improved to meet the changing requirements of the Textile Industry.



An over-all view of the Research Laboratories located on two floors in the Administration Building of the A. E. Staley Manufacturing Company at Decatur, Illinois. The Control Laboratories are located in a separate building on the plant grounds.

Research Library: An example of the complete facilities provided for our staff of expert chemists and technicians.

Textile Testing Laboratory: Gives warp yarns rigid tests to insure proper weavability and weight.



Textile Laboratory: At your service for analysis, comparison and recommendation for your sizing needs.

•

Nothing has been overlooked to make the Staley Laboratories complete in every detail that will enable us to develop and produce the very finest Textile Starches. The services of these modern, up-to-date laboratories—and our staff of chemists and technicians—are available to our customers.

Out of such research has come—and will continue to come—our complete line of Textile Starches which make it possible for you to select the proper Staley Starch for every sizing requirement . . . Textile Starches that assure consistent, high quality and dependable performance because they are under strict Control Laboratory supervision throughout the entire processing. Now is the time to get acquainted with our prompt service and complete cooperation. Write, wire or phone for more detailed information.

STALEY STARCHES

Staley's CORN AND SOY BEAN PRODUCTS

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A. E. STALEY MFG. COMPANY

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Sizing

. . . in the modern manner

SEE SLIX DEMONSTRATION AT GREENVILLE

You are cordially invited to visit our exhibit, Booth 225E, at the 15th Southern Textile Exposition, Textile Hall, Greenville, South Carolina, October 4th to 9th, 1948. There will be in operation a Warp Applicator Unit demonstrating the process for the separate application of SLIX.

SLIX TRADE MARK

SLIX is our registered trade mark for the new type liquid warp lubricant designed for application under the process patented in U. S. Patent No. 2,074,745.

Applied separately from the starch film, and at the outer edge of the individual warp ends, SLIX imparts surface lubrication to the shuttle and other loom parts which effects a marked reduction in warp stops—and, more amazingly, a similar reduction in filling stops.

Combined with the feature of being more easily removed in the desizing operation because it is hot-water extractable, SLIX is proving the ideal one-piece liquid sizing material for cotton and spun rayon yarns.

SOUTHERN SIZING COMPANY

INCORPORATED 1930

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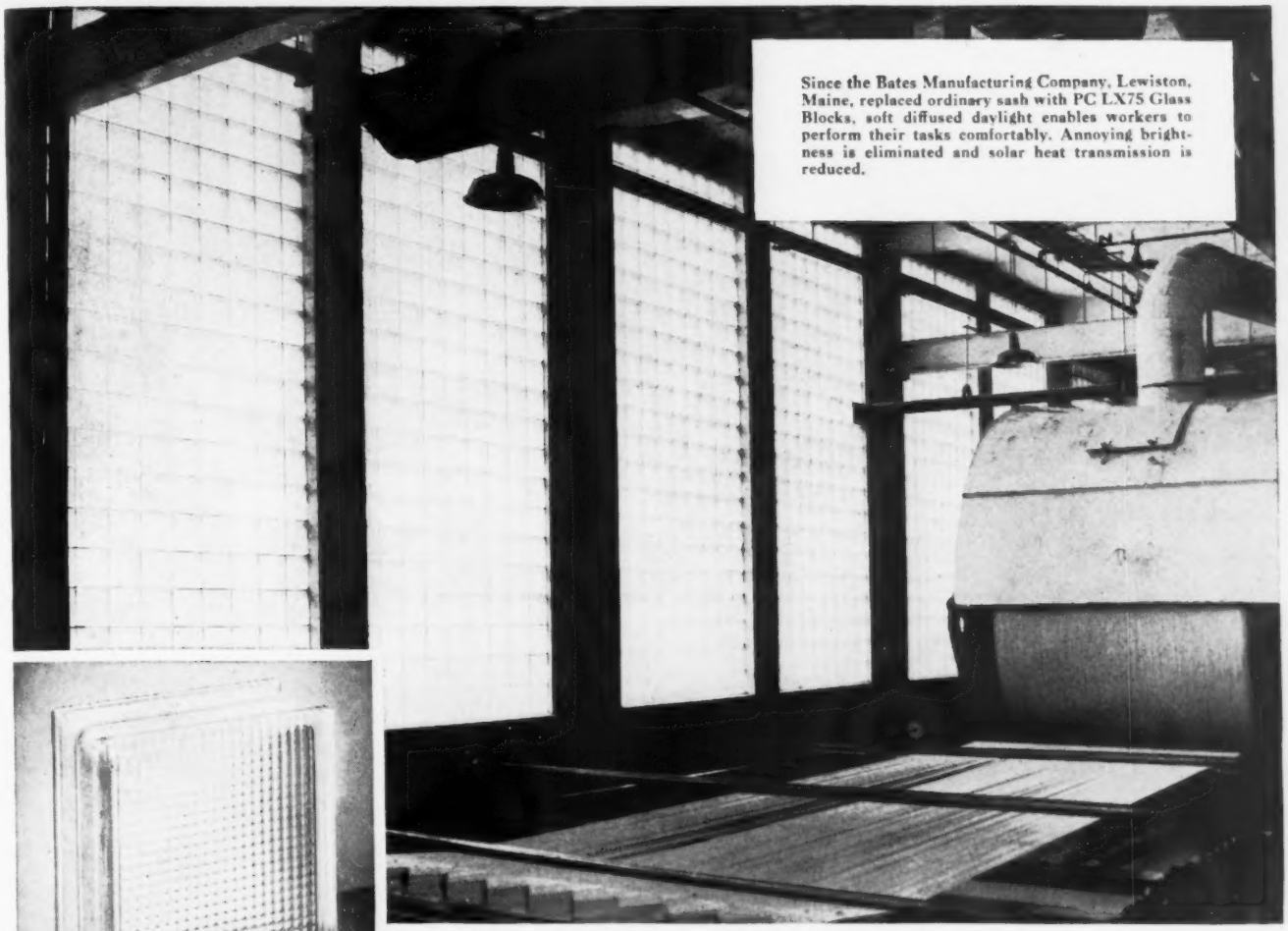
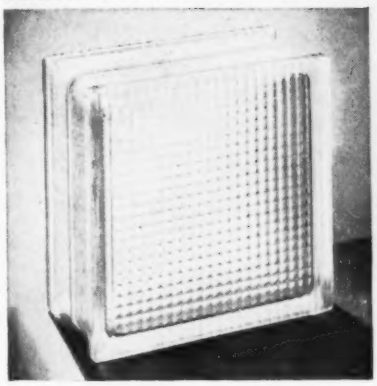
EAST POINT, GEORGIA

See our display at the 15th Southern Textile Exposition, Textile Hall, Greenville, S. C. Booth #201.



Since the Bates Manufacturing Company, Lewiston, Maine, replaced ordinary sash with PC LX75 Glass Blocks, soft diffused daylight enables workers to perform their tasks comfortably. Annoying brightness is eliminated and solar heat transmission is reduced.



Better lighting at lower cost is one way PC Glass Blocks pay for themselves

● PC Glass Blocks distribute an ample supply of diffused daylight over large workrooms. They can direct light to areas far from lighting panels, thus making additional floor space useable and reducing the cost of artificial lighting. Through better light diffusion they give employees greater eye-comfort.

In addition, PC Glass Blocks possess insulating values that help maintain desired temperatures and atmospheric conditions, reduce heating and air conditioning costs. They dampen disturbing sounds and exclude distracting outdoor views. And panels of PC Glass Blocks can be kept clean easily and economically. These are some of the ways in which installations of PC Glass Blocks will pay for themselves over a period of years.

Our technical staff will be glad to discuss your lighting problems with you, to show you where and how you can use PC Glass Blocks to the best advantage.

Meanwhile, why not send for our illustrated, descriptive booklet? It shows a wide variety of installations of PC Glass Blocks in industrial plants and offices. Just mail the convenient coupon and we shall be glad to send you a free copy. Pittsburgh Corning Corporation also makes PC Foamglas Insulation.

PC GLASS BLOCKS... the mark of a modern building

PITTSBURGH ® PC CORNING GLASS BLOCKS

Distributed by PITTSBURGH PLATE GLASS COMPANY
by W. P. Fuller & Co. on the Pacific Coast and by Hobbs Glass Ltd. in Canada

FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS.

Pittsburgh Corning Corporation
Room 689-8, 632 Duquesne Way
Pittsburgh 22, Pa.

Please send along my free copy of your new book on the use of PC Glass Blocks for industrial buildings. It is understood that I incur no obligation.

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Won't SHAKE LOOSE!

UNBRAKO

Reg. U. S. Pat. Off.

KNURLED
SELF-LOCKING
Square Head Set Screws

The "Unbrako" SELF-LOCKING Square Head Set Screws, as shown, are "real Fasteners" . . . they positively *will not* shake loose! A loose "Fastener" *invariably causes* shut-downs, *invariably causes* loss of production, and *invariably causes* increased costs—each of which these "Unbrako" Screws absolutely prevent. Why?—because of the popular "Unbrako" *Knurling* feature—which is incorporated on the internal cup point (A), and on the external cup point (B) . . . making *these* Set Screws "Unbrako" SELF-LOCKERS.

If and when the head of an "old style" square head set screw twists off, just to get it out costs many times the price of the screw these days . . . especially if it's in an awkward place! But the "Unbrako" Square Head Set Screw, made of a special alloy steel, is a "brute" for strength—it's practically *impossible* to twist its head off,—thus, helping to reduce the cost of maintenance materially.

Our patented "Unbrako" Knurled Socket Set Screws and Stripper Bolts will lock themselves in most any screw application. They *won't shake loose.* Millions and millions in use.

Write us for the name and address of your nearest "Unbrako" Industrial Distributor and your copy of the "Unbrako" Catalog.

See us at Booth 357 Southern Textile Show, Greenville, S. C. October 4th to 9th.

Knurling of Socket Screws originated with "Unbrako" in 1934.

"UNBRAKO" SOCKET HEAD STRIPPER BOLT WITH KNURLED HEAD *

Knurling of the head of this "Unbrako" Socket Head Stripper Bolt allows for fumble-proof grip—even if fingers and head are oily—thus, materially speeding production.

"UNBRAKO" SOCKET SET SCREW WITH KNURLED CUP POINT

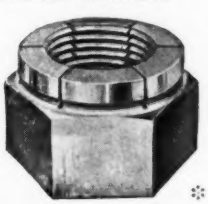
"WON'T SHAKE LOOSE"

The Knurled Cup Point of the "Unbrako" Socket Set Screw makes it a Self-Locker — positively **will not** shake loose — even when subjected to extreme vibration! "Unbrako" Socket Screw Products are available in Stainless Steel and other metals or metal alloys.

"UNBRAKO" SOCKET SET SCREW WITH KNURLED THREADS

The Knurled threads of this UNBRAKO "Won't Shake Loose" Socket Set Screw make it a Self-Locker, too, for use where the point does not lend itself to knurling.

"FLEXLOC" SELF-LOCKING NUTS



"WON'T SHAKE LOOSE"

The All - Metal, One - Piece "Flexloc" is a Self-Locking Nut that won't budge, regardless of vibration, except when a wrench is used. It can be used over and over without losing much of its torque and being a "stop" nut it will stay locked in any position on a threaded member — "a real fastener," if ever there was one. Let a few free samples convince you.

OVER 45 YEARS IN BUSINESS

*Pat'd and Pats. Pend.

STANDARD PRESSED STEEL CO.

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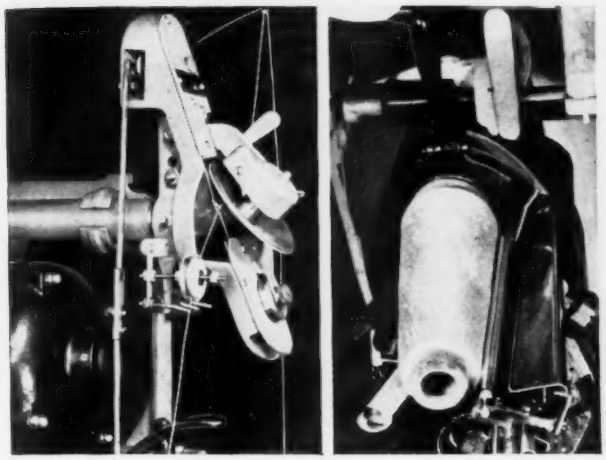
BRANCHES: CHICAGO DETROIT INDIANAPOLIS ST. LOUIS SAN FRANCISCO

Which is YOUR tension problem?

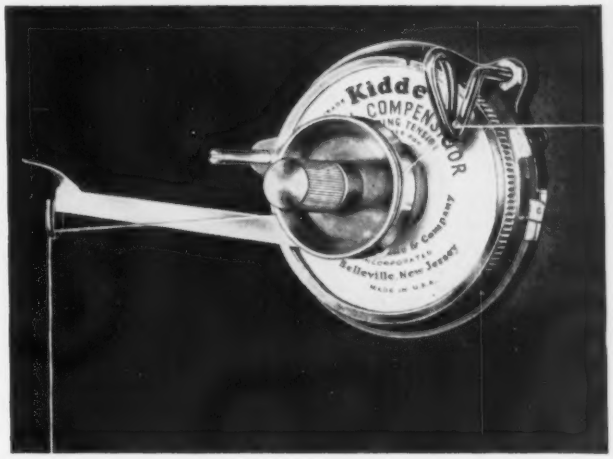
WINDING PACKAGES AT UNIFORM TENSION?



Use the *Kidde* Tension Control with free-running Roller Bail

You can get uniform tension throughout each package—and in package after package—when you use the *Kidde* Tension Control with free-running roller bail. Just set the Control for tensions as low as 1 gram—as high as 150 grams. The *Kidde* Control will do the rest!

COMPENSATING FOR INPUT TENSION VARIABLES?



Use the *Kidde* Tension Compensator

The *Kidde* Tension Compensator will deliver yarn at the tension you want—even though input tension may vary over wide limits. You can set the Compensator for any tension from 10 to 120 grams. The Compensator will *maintain* that tension through input changes ranging as high as half of the tension setting.

See these *Kidde* devices in action
Section 242 at the Southern Textile Exposition,
Greenville, S. C., October 4-9!

The words "Kidde" and "Lux" and the Kidde seal are trade-marks of Walter Kidde & Company, Inc.

Kidde

Walter Kidde & Company, Inc. • **991 Main St., Belleville 9, N. J.**

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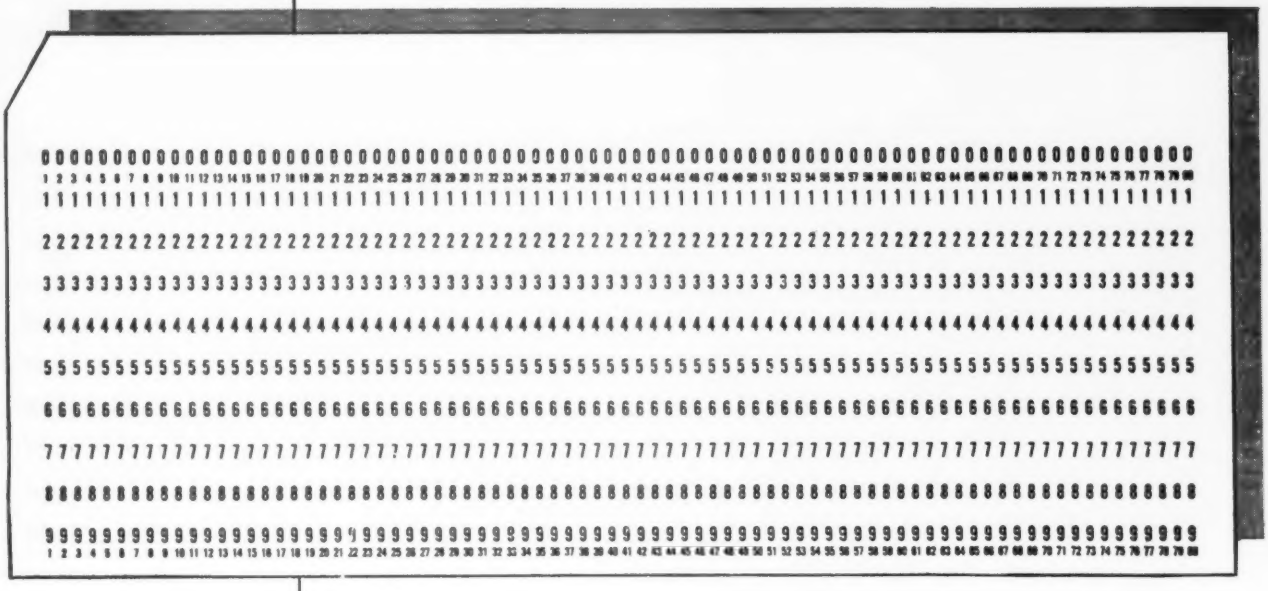
for *All* Business and Industry



The IBM Card
Symbol of Efficient Accounting

The numbers in the IBM Card are your assurance of safety in all accounting operations. Once information is recorded in the form of punched holes in designated columns of the card, the card becomes the basic entry used in preparing all subsequent reports. Accuracy is assured whenever this information is used for posting, calculating, or classifying.

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Close control over company operations · Accuracy of reports
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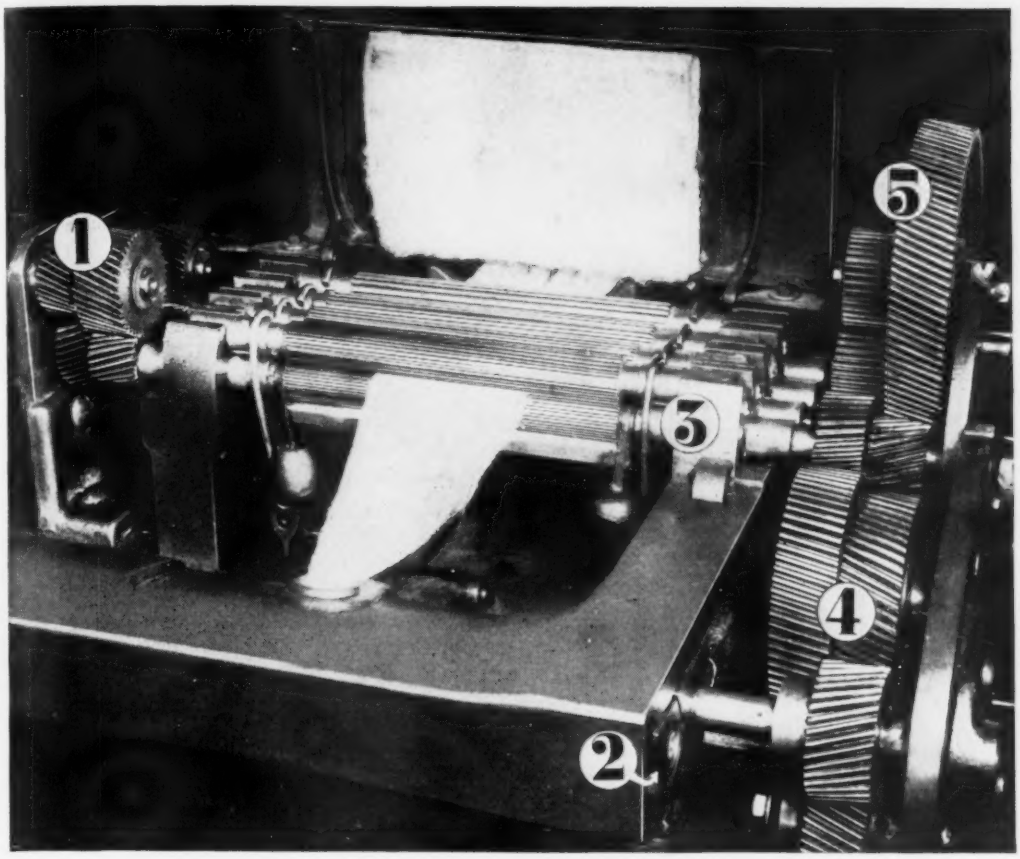
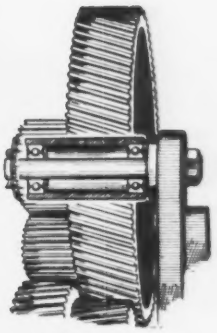
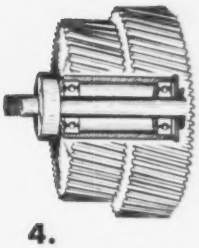
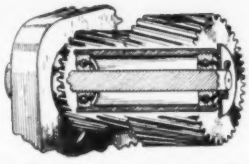




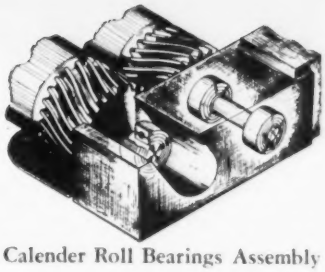
5. Crown Draft Assembly



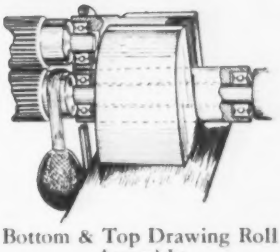
4. Crown Tension Assembly



1. Brake Draft Gear Assembly



2. Calender Roll Bearings Assembly



3. Bottom & Top Drawing Roll Assembly

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Lowers variation **Increases Breaking Strength** **Doubles Production**

★ Illustrations No. 1, 2, 3, 4, and 5 are all sealed ball bearings, including top and bottom rolls.

★ Conventional collars have been replaced with ball bearings. Frame can be operated with conventional 6 ends up at back, or from laps 18 ends up. Full 10″ flutes.

★ All fluted rolls are hardened and ground.

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IDEAL INDUSTRIES, INC.

BESSEMER CITY, NORTH CAROLINA

It's the *SIDES* of a V-BELT That Really Get the WEAR!

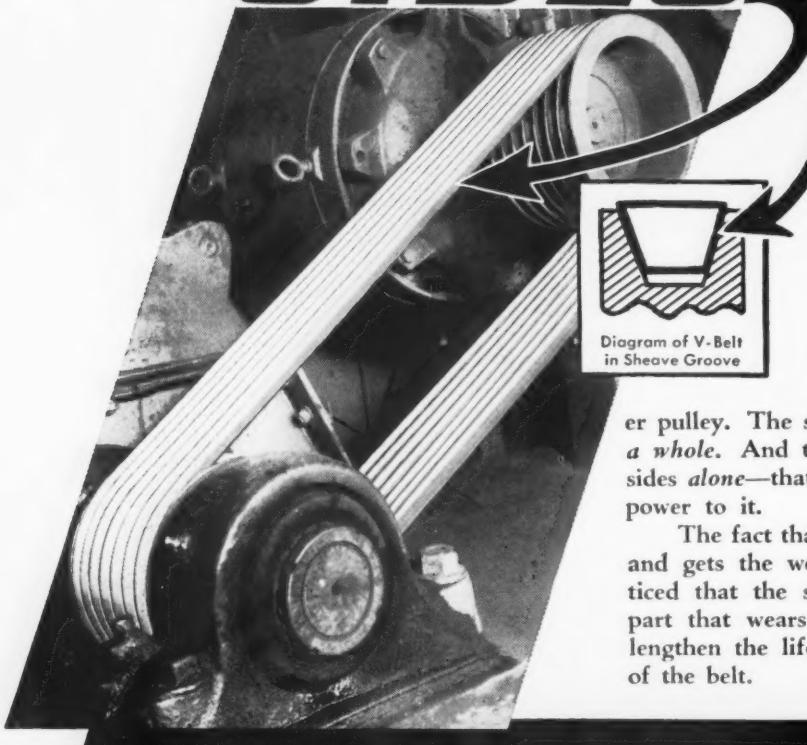


Diagram of V-Belt in Sheave Groove

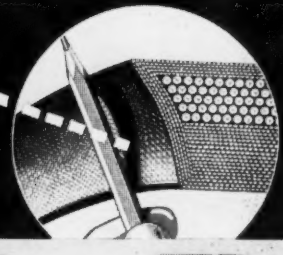
Look at this diagram of a V-Belt in its sheave. You see at once that the *sides* of the belt do all the gripping on the pulley and get all the wear against the sheave-groove wall.

It's the *sides,* moreover, that pick up all the power delivered by the driver pulley. The sides *transmit* that power to the *belt as a whole.* And then, once more, its the sides—and the sides *alone*—that grip the driven pulley and *deliver* the power to it.

The fact that the *side* is the part that does the work and gets the wear explains why you have always noticed that the sidewall of the *ordinary* V-Belt is the part that wears out *first.* Naturally, then, when you lengthen the life of the sidewall you lengthen the life of the belt.

Now See How the CONCAVE SIDE... SAVES Sidewall Wear *and Lengthens Belt Life!*

U. S. PATENT NO. 1813698



The simple diagrams on the right show exactly why the ordinary, *straight-sided* V-Belt gets excessive wear along the *middle of the sides.* They show also why the Concave Side *greatly reduces* sidewall wear in Gates Vulco Ropes. That is the simple reason why your Gates Vulco Ropes are giving you so much longer service than any straight-sided V-Belts can possibly give.

Saving Sidewall Wear is MORE IMPORTANT NOW Than Ever Before!

Now that Gates SPECIALIZED Research has resulted in Super Vulco Ropes capable of carrying much heavier loads—fully 40% higher horsepower ratings—the sidewall of the belt is called upon to do even more work in transmitting these heavier loads to the pulley. Naturally, with heavier loading on the sidewall, the life-prolonging Concave Side is more important now than ever before!

THE GATES RUBBER COMPANY, DENVER, U.S.A.

"The World's Largest Makers of V-Belts"

48W

Fig. 1

Straight Sided V-Belt

Fig. 1-A

How Straight Sided V-Belt Bulges When Bending Around Its Pulley

You can actually feel the bulging of a Straight-sided V-Belt by holding the sides between your finger and thumb and then bending the belt. Naturally, this bulging produces excessive wear along the middle of the sidewall as indicated by arrows.

Fig. 2

Gates V-Belt with Concave Sidewall

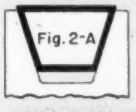


Fig. 2-A

Showing How Concave Side of Gates V-Belt Straightens to Make Perfect Fit in Sheave Groove When Belt is Bending Over Pulley.

No bulging against the sides of the sheave groove means that sidewall wear is evenly distributed over the full width of the sidewall—and that means much longer life for the belt!

GATES VULCO ROPE DRIVES

Engineering Offices and Jobber Stocks IN ALL INDUSTRIAL CENTERS of the U. S. and 71 Foreign Countries

Gates

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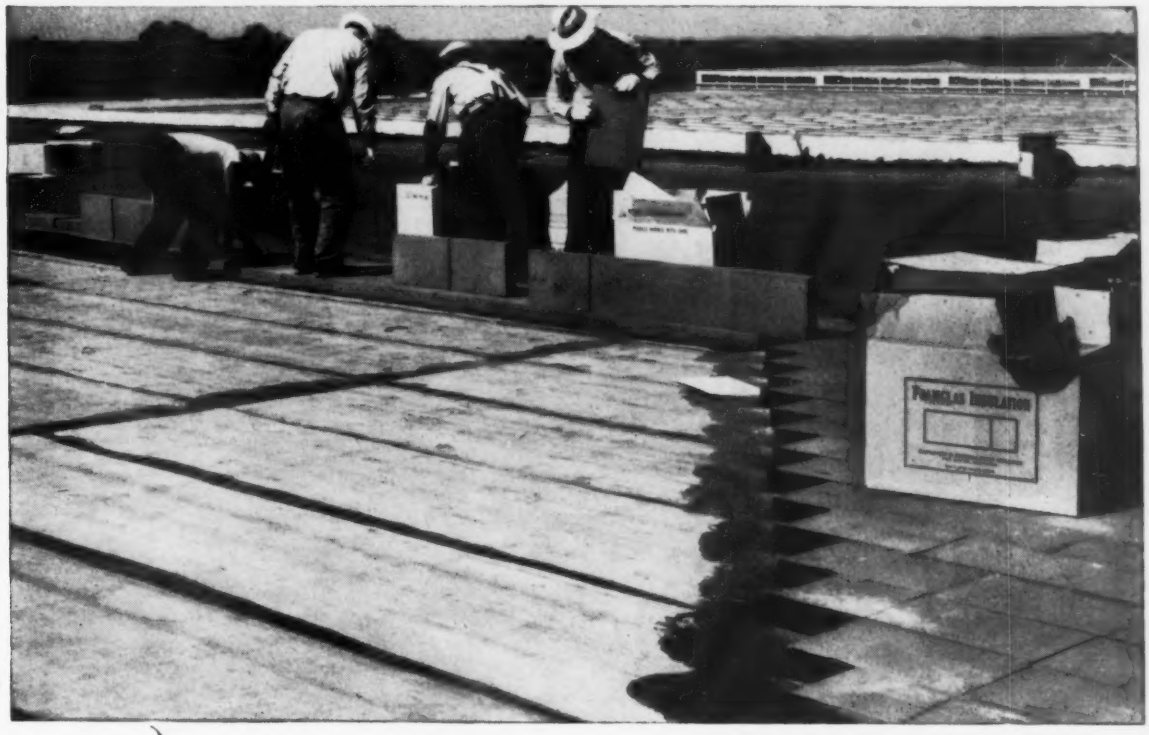
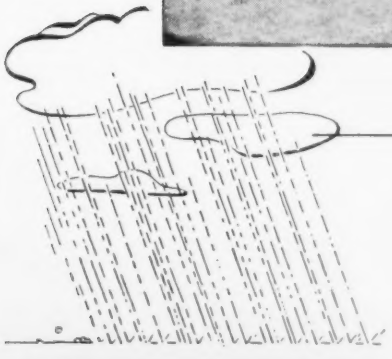
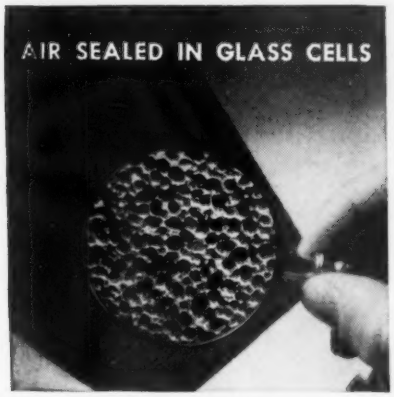




It's Waterproof!

That is one of the main reasons why PC Foamglas is the permanent insulation.



THE MAGNIFIED CROSS SECTION of PC Foamglas shows its cellular structure . . . glass bubbles solidified into big, strong, rigid blocks. In the millions of cells of glass-enclosed air, lies the secret of its insulating value.

Water cannot get into or through PC Foamglas. Exhaustive immersion tests in the laboratory and long trouble-free service as insulation on roofs, in walls and floors, have proved that.

Foamglas is made of true glass, in the form of millions of minute air-filled closed glass cells, solidified into strong, rigid blocks. Therein lies the secret of its insulating efficiency.

PC Foamglas is also fireproof, verminproof, fumeproof, and acidproof. It withstands humidity and is an effective vapor seal. When installed according to our specifications, for recommended applications, PC Foamglas retains its original insulating efficiency permanently.

Our current booklets describe and illustrate many applications in which PC Foamglas, on roofs, in walls and floors, is helping to maintain desired temperatures, to minimize condensation. Why not send in the convenient coupon today? We shall be glad to forward free copies of the booklets you select. Pittsburgh Corning Corporation also makes PC Glass Blocks.

PITTSBURGH PC CORNING ®

FOAMGLAS INSULATION

FOR ADDITIONAL INFORMATION SEE OUR INSERTS IN SWEET'S CATALOGS

When you insulate with FOAMGLAS . . . you insulate for good!

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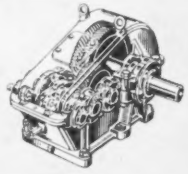
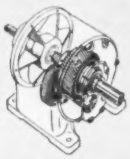
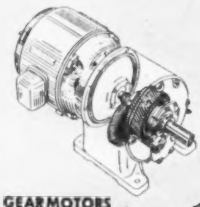


HERRINGBONE GEAR SPEED REDUCERS

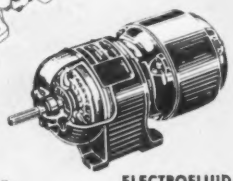
WORM GEAR SPEED REDUCERS



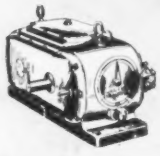
HELICAL GEAR SPEED REDUCERS



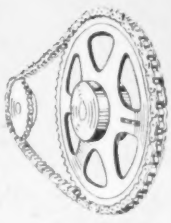
GEARMOTORS



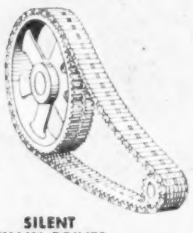
ELECTROFLUID DRIVES



P.I.V. GEAR SPEED VARIATORS



SILVERLINK ROLLER CHAIN DRIVES

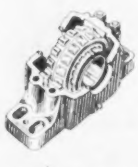


SILENT CHAIN DRIVES

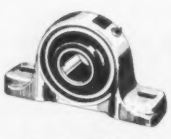
STEEL AND MALLEABLE CHAIN DRIVES

V-BELT DRIVES

UNMOUNTED BALL AND ROLLER BEARING UNITS



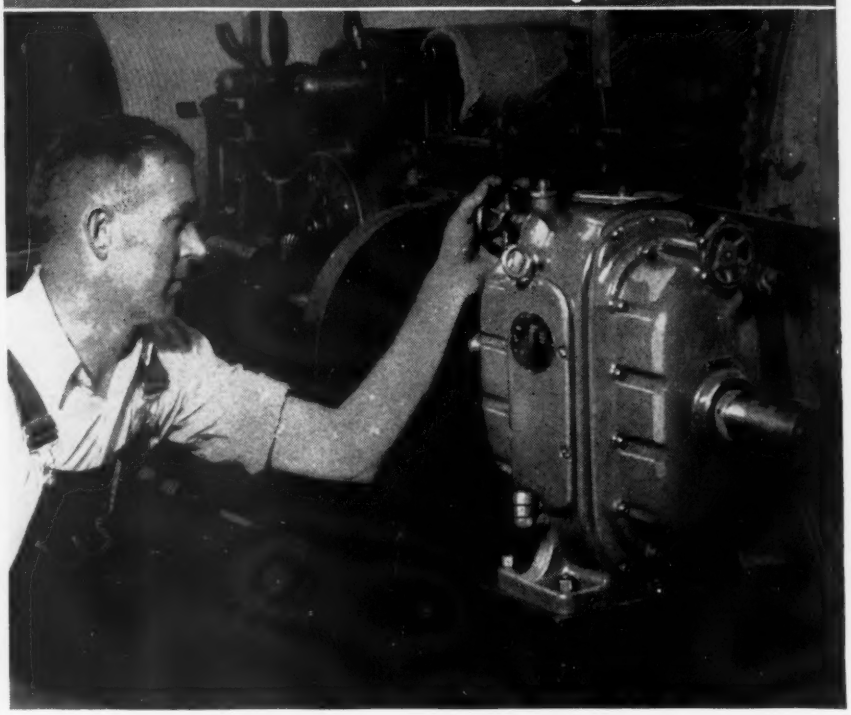
ROLLER BEARING MOUNTED UNITS



BALL BEARING MOUNTED UNITS

BABBITTED BEARINGS

SELECT---*and Maintain* YOUR IDEAL MACHINE SPEED WITH P.I.V. GEAR *Speed Variator!*



Wherever precise speed is a factor in any manufacturing process, the unique P.I.V. Gear speed variator gives outstanding satisfaction.

With this unit, power is transmitted positively through an all-metal chain, making tooth-to-tooth contact with metal wheels. Speeds can be varied infinitely within range of the unit and once selected, the chosen speed is maintained accurately. Speed is changed while the drive is running, by a small hand wheel or by automatic or remote control.

For precise speed control in any type of industrial application use the P.I.V. Gear. Built in a wide range of sizes, and types, fully described in Book 1874.

LINK-BELT COMPANY

Chicago 9, Indianapolis 6, Philadelphia 40, Atlanta, Dallas 1, Minneapolis 5,
San Francisco 24, Los Angeles 33, Seattle 4, Toronto 8.
10.984 Offices, Factory Branch Stores and Distributors in Principal Cities.

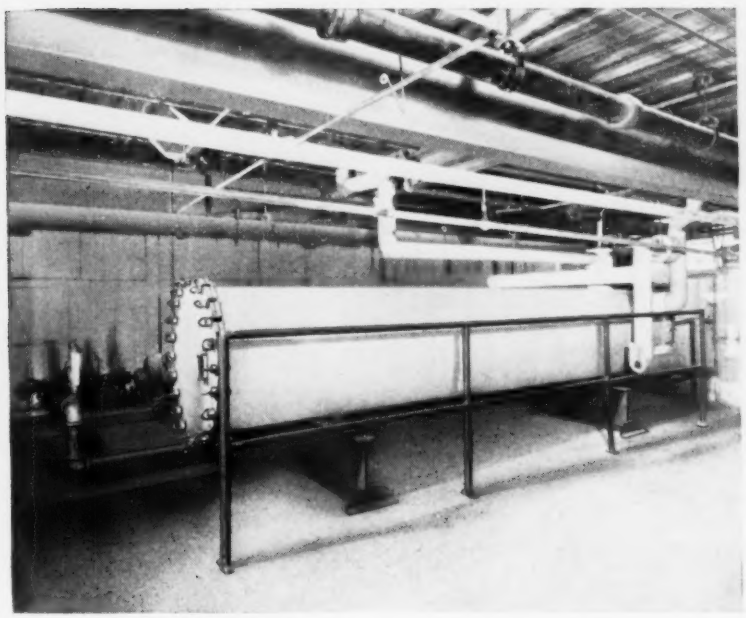
LINK-BELT

Power Transmission Machinery

SEE OUR EXHIBIT—SOUTHERN TEXTILE EXPOSITION—GREENVILLE—OCT. 4-9

Is Your Sewer Temperature Over 120° F.?

Then You Are *Wasting Valuable* B.T.U.'s That Sims Will Convert Into Hot Water For Processing.

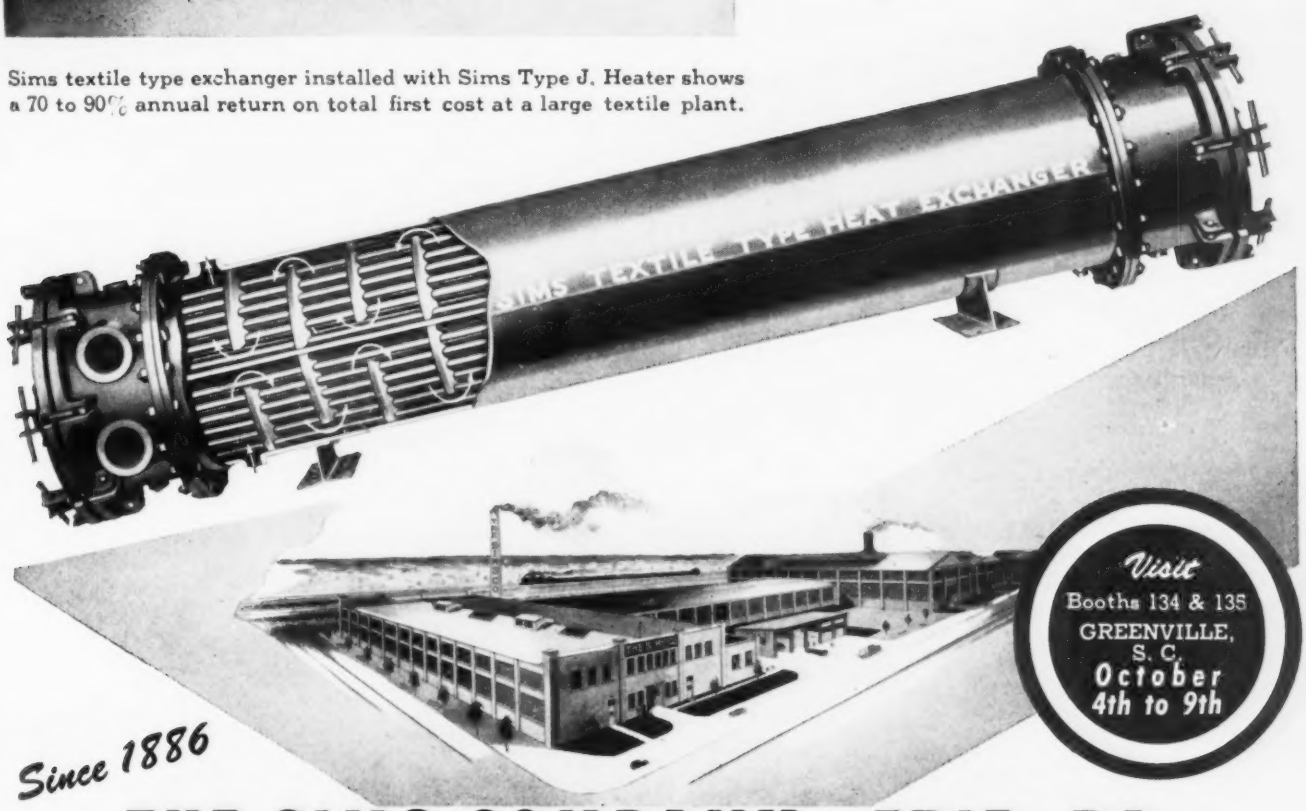


Sims textile type exchanger installed with Sims Type J. Heater shows a 70 to 90% annual return on total first cost at a large textile plant.

Linty contaminated sewer water was a problem until Sims discovered how to handle it. One textile plant was planning a boiler addition for producing more hot water—a Sims Survey proved that hot sewer water directed thru a Sims Heat Recovery System provided the extra hot water capacity at almost no fuel cost and will show a 70 to 90% return each year on the total cost of the installation. Investigate the Sims Method that converts wasted B.T.U.'s into profit B.T.U.'s.

Visit our display at Greenville, October 4 to 9th.

THE SIMS CO., Box 1096W, ERIE, PA.



Since 1886

THE SIMS COMPANY • ERIE, PA.

Manufacturers of Exhaust Gas Boilers • Heat Exchangers • Storage Water Heaters • Feed Water Heaters Steam Separators • Commercial Type Instantaneous Water Heaters • Oil Heaters • Quenching Oil Coolers Caustic Soda (Sodium Hydroxide NaOH) Recovery Equipment and Unit Type Coal Pulverizers

TWO GREAT NAMES...DODGE-TIMKEN!

It was Dodge who took the famous Timken Bearing, mounted it, sealed it, housed it and delivered a pillow block of new high quality—fully assembled, ready to lock on the shaft and carry the power loads of industry with new efficiency.

Dodge develops *outstanding* power transmission products, as proved by the big success of Dodge-Timken Bearings on millions of industry's toughest jobs.

Dodge-Timken Bearings are supplied promptly from stock in four basic types and a wide range of sizes to meet an almost limitless variety of anti-friction problems.

Dodge also produces Ball Bearing Pillow Blocks which, with Dodge-Timken Bearings, comprise the famous "30,000 hour line." Write for complete bulletins.

DODGE MANUFACTURING CORPORATION
Mishawaka, Indiana

DODGE

of Mishawaka, Ind.

CALL THE TRANSMISSIONEER

He is your local Dodge Distributor—factory trained—qualified to suggest ways to improve your machine performance, increase production. Look for his name under "Power Transmission Equipment" in your classified phone book.

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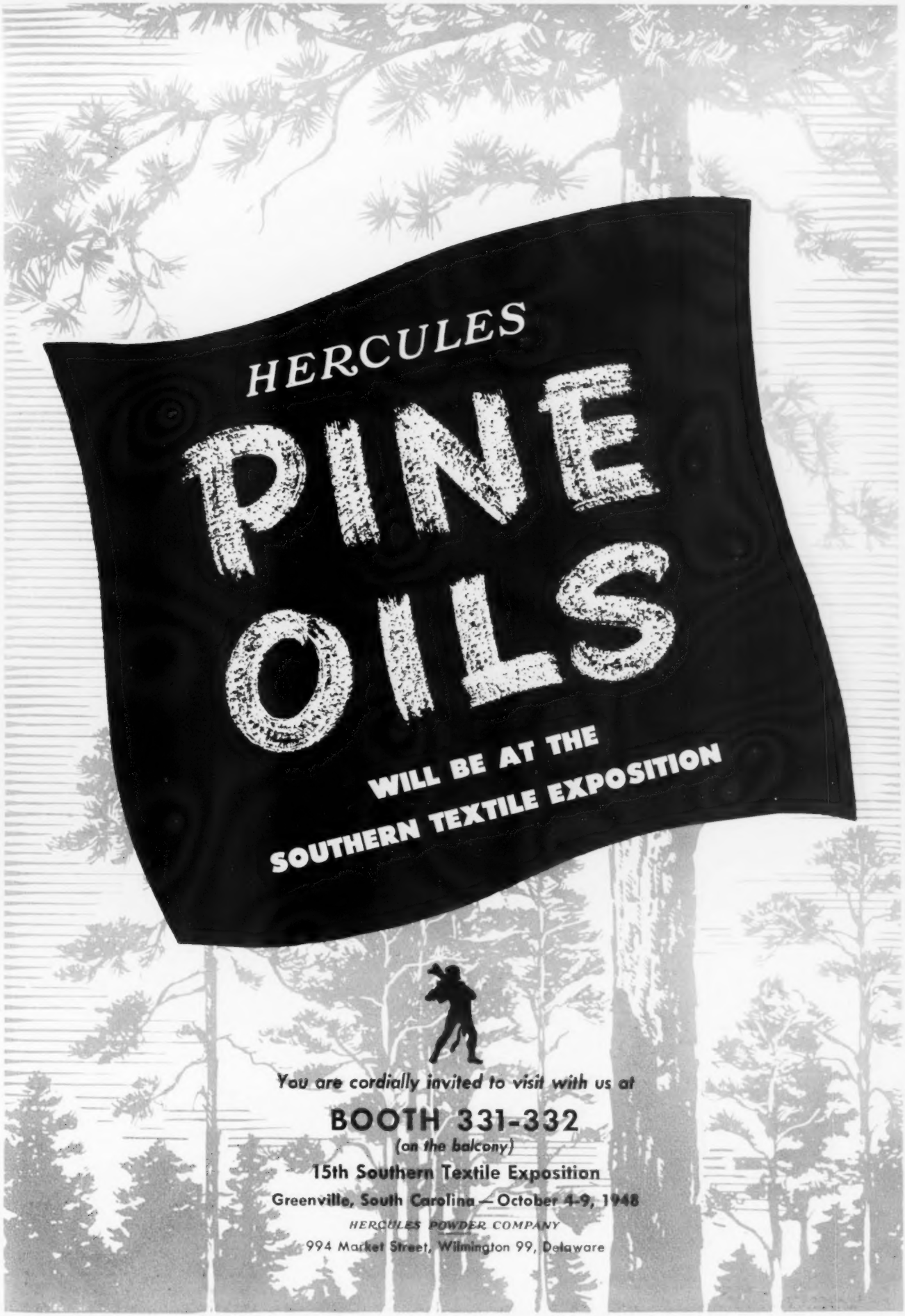
NAME PLATES

FOR YOUR NAME PLATE REQUIREMENTS, WRITE OUR SUBSIDIARY, ETCHING COMPANY OF AMERICA, 1520 MONTANA STREET, CHICAGO 14, ILLINOIS



You are cordially invited to visit with us at

BOOTH 331-332

(on the balcony)

15th Southern Textile Exposition

Greenville, South Carolina — October 4-9, 1948

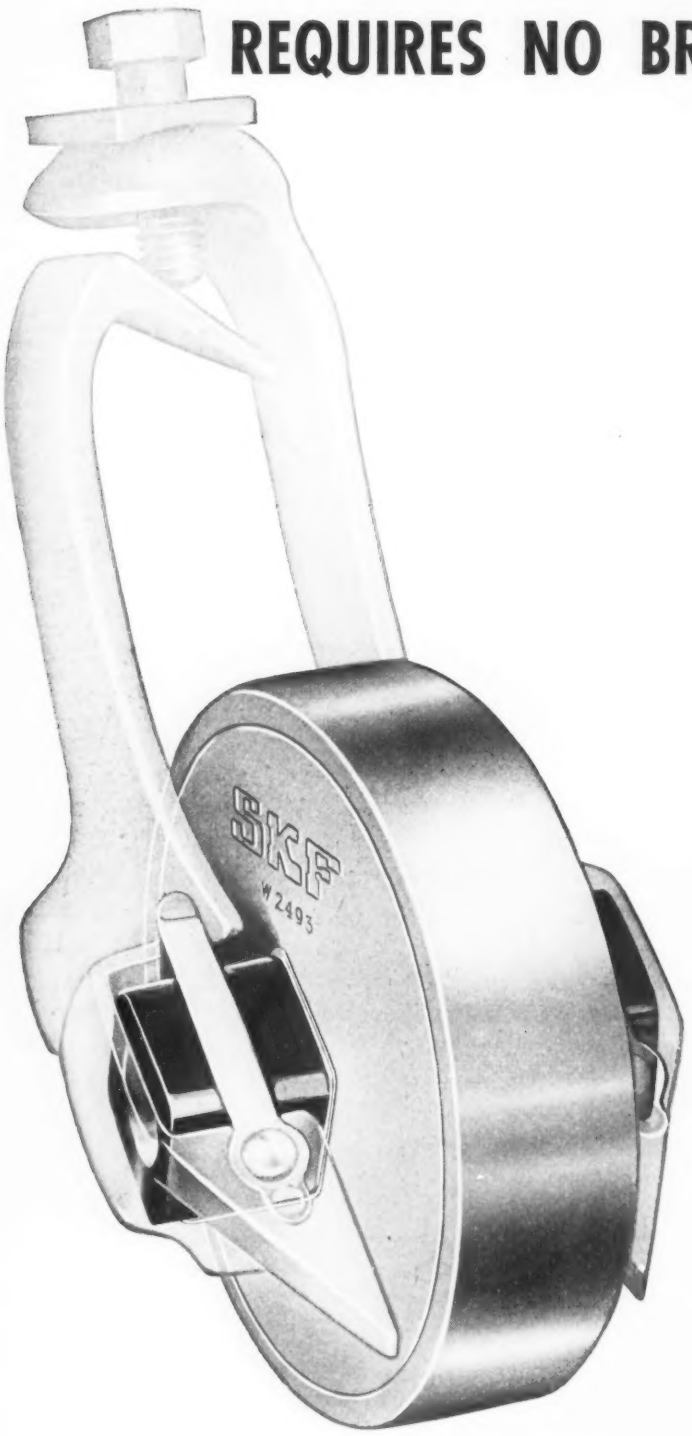
HERCULES POWDER COMPANY

994 Market Street, Wilmington 99, Delaware

NY8-3

The Ball Bearing Tension Pulley that

REQUIRES NO BRACKET REPLACEMENT



It fits the old bracket. No new brackets needed. No bracket alteration required. Merely lift out the old pulley and drop in the new one.

Its only exposed rotating part is the rim of the strong, light, aluminum pulley. Prelubricated at the factory, it requires no further attention for at least 25,000 service hours.

It's mounted on a large capacity SKF Red Seal Bearing which, in turn, is secured to a stationary shaft.

See it in Booths 409-410-411 at the show. Ask for Pamphlet No. 288 either at the show or by writing direct. Consult your nearest Authorized SKF Distributor.

6502

SKF INDUSTRIES, INC., PHILA. 32, PA.

● *SKF originated the anti-friction tension pulley—was first to provide a ball bearing tension pulley for existing old-style brackets. Today, more SKF Anti-Friction Tension Pulleys are in use than all other ball or roller bearing tension pulleys.*

SKF

BALL BEARING

Tension Pulley

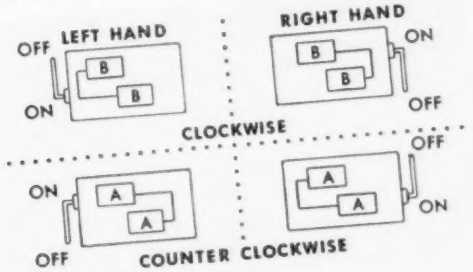
NEW SHIPPER ROD SWITCH

Compact CLASS 9002 TYPE K shipper rod switch has die cast enclosure with conduit openings at each end

Built to Meet TEXTILE INDUSTRY Requirements

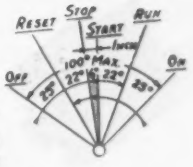
No other design has all these features necessary to fully meet Textile Industry requirements!

Four Operating Positions are possible with a single device—operating arm is symmetrical with respect to travel and location . . . two sets of connections are provided on each contact mechanism. One device meets all installation requirements.

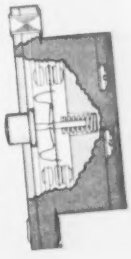


Slotted Operating Arm can be turned to any angular position on shaft and provides for necessary linkage adjustment to give correct "throw."

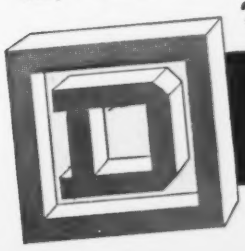
Operating Arm Travel is ideal for operator convenience and safety. Only 6° movement is required for "doffing." Contact overlap between INCH and RUN positions is adequate to insure closing of the starter maintaining circuit. Overtravel provided at each end prevents "creeping" shipper rod from affecting operation.



Self-Contained Contact Mechanism is snap action, easily wired, readily replaced in the field. Simple operating mechanism with alloy leaf springs separate from contact blade...Stainless steel compression-return spring . . . Husky case of highly arc-resistant melamine ...Separate N.O. and N.C. circuits with double-break silver contacts . . . Four No. 6-32 binderhead terminal screws.



Write for Bulletin 9002 K. Address Square D Company, 4041 N. Richards St., Milwaukee 12, Wis.



SQUARE D COMPANY

DETROIT • MILWAUKEE • LOS ANGELES

SQUARE D COMPANY CANADA LTD., TORONTO • SQUARE D de MEXICO, S.A., MEXICO CITY, D.F.

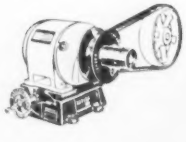
REEVES reduces waste of Time! Material! Manpower!

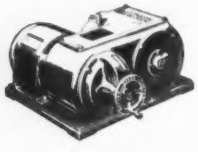
This hydraulic quetsch provides selection of correct pressures for the new resin, TBL and similar finishes for every type of fabric. By means of the REEVES Motodrive with which the machine is equipped, an operator can obtain instantly any desired speed—from 40 to 120 yards per minute—to compensate for variations in the weight and fibre of cloth handled. The quetsch is a product of John Verduin Machine Corp., Paterson, N.J.

THE THREE BASIC REEVES SPEED CONTROL UNITS

VARIABLE SPEED TRANSMISSION for providing infinite, accurate speed flexibility over a wide range—2:1 to 16:1. Sizes—fractional to 87 hp.

VARI-SPEED MOTOR PULLEY provides an instantly variable speed drive within 4:1 ratio for any constant speed motor. Sizes to 15 hp.





MOTODRIVE combines motor, speed varying mechanism and reduction gears in single compact unit. Speed variations 2:1 to 6:1 inclusive. Sizes to 15 hp.

● Install REEVES Variable Speed Drives on your machines and you'll see results, not next month, not next week—but *immediately.* REEVES Speed Control *instantly* and *accurately* compensates for every change in texture, weight, temperature, moisture and other variable factors . . . provides exactly the right speed for every operation and every operator, *under every changing condition* . . . cuts your costs by reducing waste of time, material and manpower.

Applicable to beamers, warpers, slashers, dry cans, mangles, dryers, nappers, range finishers and many other textile machines, the three basic REEVES Speed Control units are available in a wide range of designs, sizes, capacities and speed ratios—with manual, push-button or completely automatic control.

A REEVES engineer thoroughly familiar with textile mill operations will be glad to work with you and recommend the units which best suit your particular needs. Write today, and ask for a copy of the comprehensive, 114-page catalog W9-150A.

REEVES PULLEY COMPANY • COLUMBUS, INDIANA

Visit the Reeves Exhibit

TEXTILE SHOW—GREENVILLE, S. C.—OCTOBER 4-9—BOOTH NO. 247-C

ACCURATE • VARIABLE

Reeves Speed Control

GIVES THE RIGHT SPEED FOR EVERY JOB!

Throw-away that Oil Can!

"The Colonel" comb box uses no oil . . . grease reservoirs in the hub and throw arm hold months of operating supply. Sealed ball bearings are shielded against the infiltration of dust and lint, giving continuous free even motion. This reduction in waste from oily selvages gives you cleaner, better production from your card. "The Colonel" is made for all standard woolen and cotton cards, right or left hand, and can be made to fit any card you have. "The Colonel" has a comb stroke of 1 3/8"—this longer stroke will permit a lower running speed to handle the web.

all ball-bearing oilless COMB BOX

Equipped with ball-bearing tailstock, adaptable to fit shafts 7/8" to 27/32". Comb shaft sleeve has 7/8" bore (27/32" sleeve bore furnished on Lowell orders.) Maximum running speed of 1750 rpm.

Manufacturing comb boxes is our specialty. You name the card—we will build the comb box to fit it. Write or call for additional information.

ODOM
Machine Manufacturing Corp.
Roswell, Georgia

Send additional information to

NAME_____

TITLE_____

MILL_____

ADDRESS_____

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Manufacturers of Picker Fans • Sliver Trumpets • Abbott Winder Parts • Gear Blanks

15th SOUTHERN TEXTILE EXPOSITION TEXTILE HALL GREENVILLE, SOUTH CAROLINA OCTOBER 4 to 9, 1948

The last Southern Textile Exposition was in 1941. In the past seven years the inventors and manufacturers have made many new inventions and improvements. They will display the latest in textile machinery, equipment, accessories, supplies, primary and fabricating materials and parts.

Two hundred and twenty exhibitors will be in Textile Hall with their products. Complete, up-to-date, first hand knowledge may be gained at the Exposition.

Round Table

(Continued)

(Continued from page 156)

how to speed up one or two vital points where results will be best. Later, additional points can be brought into the program. Remember that basically slow persons can be speeded up only within limits. Therefore, emphasize what is most important.

A foreman's responsibility may cover only direct production; yet there is a morale-building influence in helping workers reach the top goal they are capable of. No one enjoys being the mill's "slow poke," even when it has little effect on earnings. Aid a man in getting out of that classification, and you have not only a better worker but also a more loyal one.

By the time a person is old enough to start working in the mill, he has passed the age for basic changes in speed. He can be taught speed in certain operations, and the selection of these spots is the key to the problem. Of course, we refer only to speed in keeping with his own ability. Speed maintained by pressure is not good.

Thousands of workers with a fundamental slowness in their thinking and movements have learned to use speed at one or two points. Foremen might profitably use this principle to teach speed where it will do the most good for the mill and for individual employees. *(R-424)* George M. Dodson, Harrisburg, Pa.

Error in June Article, Full-Fashioned Man Says

I think there was a misstep in the fine article "It Pays to Recondition Full-Fashioned Machines" [T.W., June, p. 123A]. Most of the recommendations made in the article are excellent; but the one on setting the sinker heads—one of the most important—is not correct. The perfect setting of the top tables or front bed must be the first step; not the second step, as stated in the article.

I quote from my manual, approved by Textile Machine Works and printed in the July, 1940, issue of Textile World:

"Lay the sections of the front bed, C, on the frame, and then carefully check the alignment of the frame before attempting to fasten the bed down. When the machine is in perfect alignment, the pin holes in this bed will match those in the frame sections. This bed must be absolutely straight, since its back edge determines the location of the needles, sinker heads, catchbar, narrowing machine

SEE US AT GREENVILLE! October 4 to 9 — See a demonstration of Tennant equipment at BOOTHS 125-126

LIGHT METER shows 60 foot candles reflected from dry-cleaned floor, 10 foot candles from scrubbed floor. (Name of customer on request.)

Because they're DRY CLEANED, with the TENNANT Floor Maintenance System

Tennant Floor Machines are available for 8", 12" and 16" drum accessories.

Measuring light-reflection with a meter, this mill superintendent finds that his Tennant *dry-cleaned* floors are 500% brighter than adjacent areas (which were scrubbed). In addition dangerous slip-hazards have been decreased, rough spongy surfaces eliminated and average cleaning *time* per square foot has been cut by about 80%.

Safe Working Conditions Boost Employee Morale!

Dark, slippery, oil-soaked floors absorb light, cause accidents and lower morale. But with the Tennant System *your floors can quickly be reconditioned* and made clean, dry and bright—real assets to your mill's production.

- **Restores.** Removes dark, soft topwood fibers; leaves sound, vigorous surface.
- **Hardens.** Seal fills, binds, hardens floor. Makes it bright, durable.
- **Dry Cleans.** Eliminates scrubbing! Keeps floors clean, smooth, bright. Fast, convenient, economical.

WRITE FOR BULLETIN

G. H. TENNANT CO.
2586 N. 2nd Street
MINNEAPOLIS 11, MINNESOTA

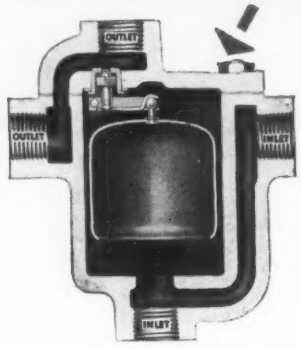
The way to finer floors
ELIMINATE TENNANT SCRUBBING
Floor Maintenance System

CHOOSE CLARK
All down the line

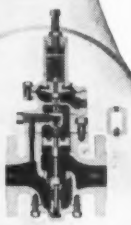
A NEW TRAP JOINS A FAMOUS LINE --

Clark Traps

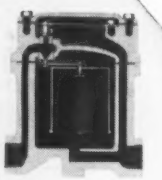
INTRODUCING THE NEW CLARK "60"



Series "80" Inverted Bucket Steam Trap



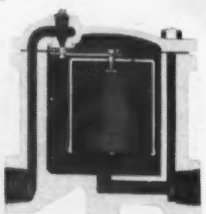
"CRV" Pressure Regulator



A small trap with big trap features. Positive seating with guided disc. Equipped with *two inlets* and *two outlets* for easy installation for horizontal, vertical or angle connections.

Let Clark's 40 years of experience be your guide in selecting the proper trap or valve for your drainage needs.

Series "70-T" Inverted Bucket and Blast Steam Trap



Write today for complete story on Clark Traps and Valves.

THE CLARK MANUFACTURING CO.
1836 EAST 38th STREET • CLEVELAND 14, OHIO

Series "70" Inverted Bucket Steam Trap

Clark

TRAPS — FLOAT, INVERTED BUCKET, OPEN BUCKET AND VACUUM • REDUCING VALVES • STRAINERS

Round Table

(Continued)

points, etc. After it is fastened down, go over it carefully, remove all burrs, and wipe perfectly clean with waste whenever it is to be used for gaging." (On some floors, laying the bed on the frame will cause misalignment.)

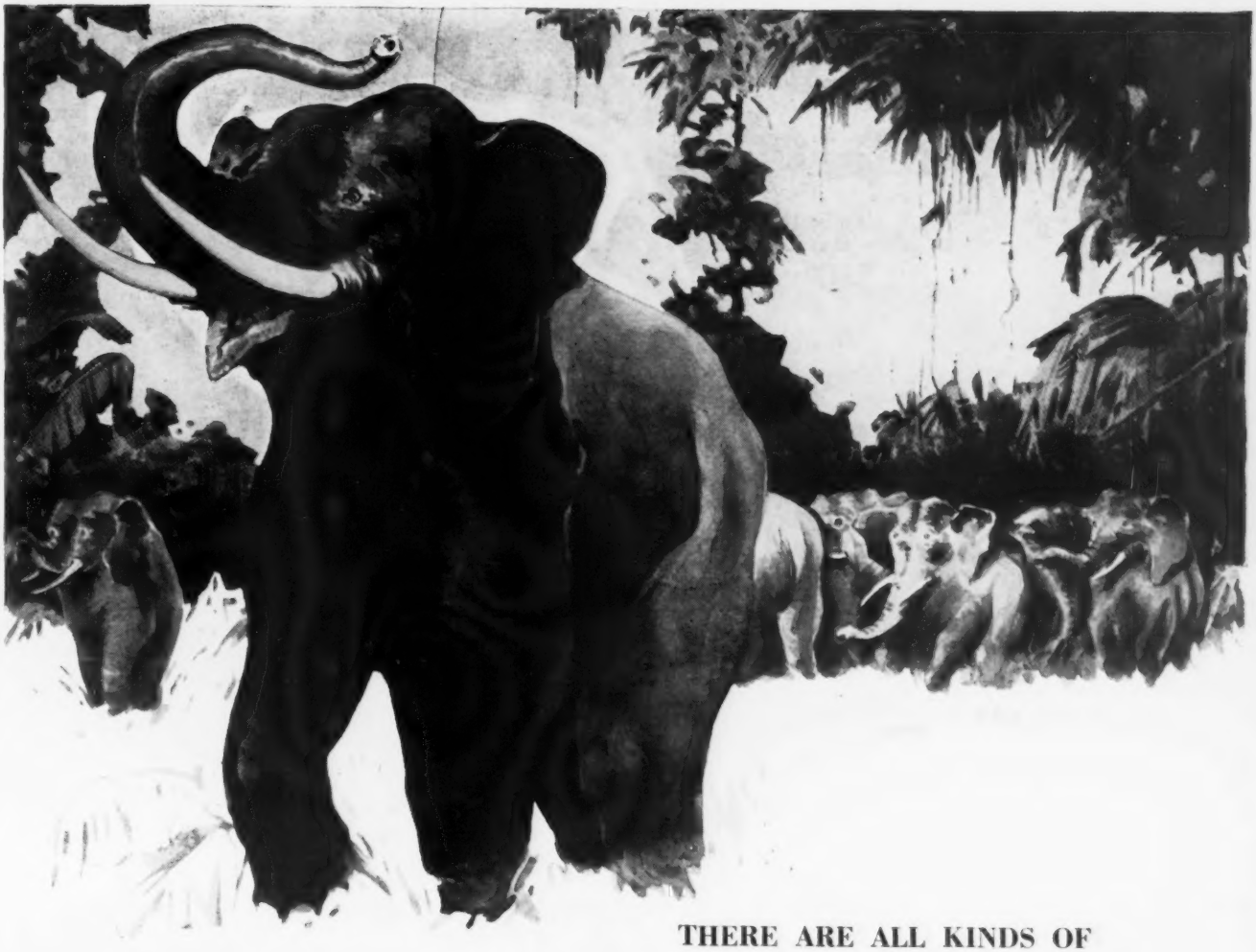
"Place the sinker heads; set them central to the needles"; (level with paper shims if necessary;) "gage to the front bed; and fasten them down temporarily, because the tops of the needles must be aligned parallel to the top edges of the sinkers before the sinker heads have their final setting. A temporary setting of the needle height is made with a block gage, after which the needles are drawn down so the tops of the needles are even with the tops of the sinkers, and the camshaft is firmly locked as for checking the positions of the cams. Be sure the camshaft is locked; otherwise the pull of the springs and vibration from other machines will ruin the alignment. Test the needle height by scraping over the tops of the needles with a thin piece of steel, and adjust until the needles are in perfect alignment. Bring the needles up, and adjust the sinker heads with the sinkers protruding about one eighth of an inch until both needles and sinkers are central with each other." (An excellent recheck can now be made with a dial indicator of both the sinker heads and needles.) *(R-426) Walter A. Simond, Franklin, N. H.*

Worsted Spinning

(*Continued from page 121*)

of the back roll will be automatically compensated for once the proper ratio is found.

NEW DRAFT SYSTEM. The drafting system of the drawing frames is a new development for the drawing process. Four lines of bottom rolls carry three lines of top rolls. Bottom rolls are: front 1.375 in., metallic fluted; second, 1 in., sandblasted-satin finish; third, 1.375 in., metallic fluted; fourth, 1.375 in., metallic fluted. The middle top roll has a synthetic covering; the first and back top rolls are metallic fluted. The location of the middle top roll with respect to the second and third bottom rolls is of main interest. Front and back top rolls are located directly over the front and back bottom rolls respectively. The middle top roll is placed so that it will be in contact with the third bottom roll, and at an angle forward from the vertical. At each end of the top roll is a button.



THERE ARE ALL KINDS OF

LEADERSHIP

MANUFACTURED *by* DENMAN

But few leaders have a greater responsibility than the product manufacturer striving to keep abreast of a great and growing industry.

With Denman, it's the never-ending job of supplying the textile industry with the BEST in picker design and construction FIRST. To do this, the scope of Denman laboratory research is matched by an equally broad program of continuous field investigation and on-the-job testing. This double-barreled, Denman-Terrell approach to your picker requirements is one of the reasons Denman Pioneer Pickers ALWAYS give you

LOWEST COST PER LOOM, PER YEAR

Exclusive Sales Agents

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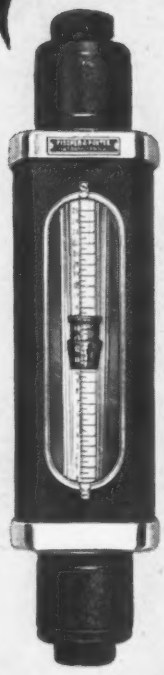
- √ Oil emulsion flow control to wool combing machine or picker.
- √ Flow control of wool scouring liquors to centrifugals in wool grease removal processes.
- √ Flow control of soap and water to rope washers.
- √ Dye solution control to vats in continuous dyeing processes.
- √ Caustic and acid flow rate control in mercerizing processes.
- √ Specific gravity control for any acid or alkali used in textile manufacturing processes.

Send for catalog 32 describing corrosive service FLOWRATOR meters and catalog 50 giving complete details about control instruments.



BASIC PRINCIPLE

In this type of meter, the variation in area is obtained by means of a vertical tapered tube with the smallest diameter at the bottom. A weight of fixed diameter, (called the "float") moves freely within this tapered tube and hence the area between the float and tube increases as the float rises. This area then becomes a measure of the flow and for every flow rate there is a fixed position of the float in the tube. Therefore, the "FLOWRATOR" can be accurately calibrated to read directly in flow rate.

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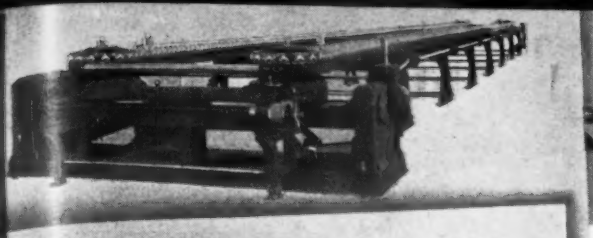
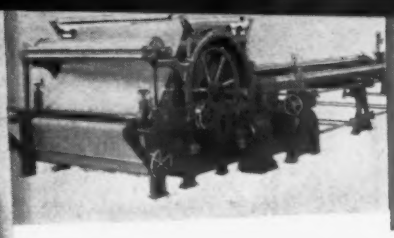
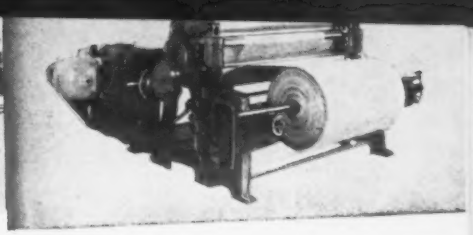
or washer, which keeps the roll from dropping down into contact with the second bottom roll. The top roll creates a nip with the third bottom roll but not with the second. The distance between middle top roll and second bottom roll is about 0.020 in. The back pair of rolls nip the sliver firmly and draw it from the creel into the break-drafting zone. The break-draft zone extends from the nip of the back rolls to the nip of the middle top roll and the third bottom roll. The main drafting zone is from this nip to the nip of the front rolls. The small second bottom roll is not so much a drafting roll as it is a control roll. The distance between it and the middle top roll is not small enough to have a retaining effect on the fiber but is narrow enough to confine the fibers and to hold them in proper arrangement as the strand is drafted.

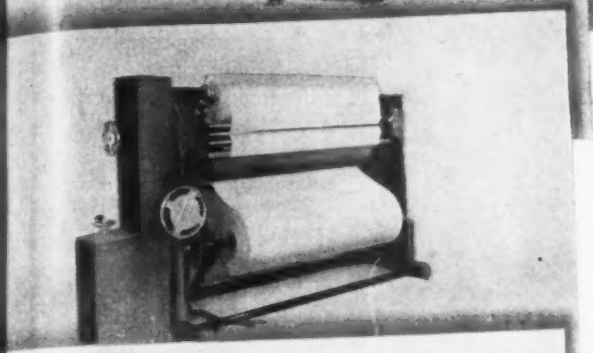
Fluting of the metallic rolls is of special interest. Usual metallic fluted rolls always held the possibility of cutting the fibers, particularly when the collars at the ends of the rolls became worn and the flutes meshed into each other too deeply. The fluted rolls used on the worsted-drawing drafting system are cut with a new shape designed to grip the fibers firmly and evenly at all points of contact of the fluting as the roll turns. The grip is even and is designed so that the possibility of cutting the fiber is negligible.

BALLING MOTION. The other mechanism of interest on the drawing frame is the balling motion. The balling motion winds the sliver into a ball instead of coiling it into a can. Not a single roving can is used in the mill. The elimination of cans is a prominent improvement as it conserves floor space, reduces the cost of mill supplies, and removes the possibility of stretching or damaging sliver in pulling it from the can. The tube on which the sliver is wound in the form of a ball is held firmly against a revolving drum and is driven by frictional contact. The sliver is guided onto the ball by an arm supporting a presser paddle. Sliver from the front drafting rolls passes over a trumpet, down through a pair of calender rolls, and then to the arm of the balling motion. A large guiding trumpet at the outer end of the baller arm guides the sliver to the arm itself, where the strand is wound around the arm several times for the snubbing effect. From the arm, sliver is taken to the paddle which rests on the ball. The baller arm is somewhat similar to the arm and presser of a roving-frame flyer. Both mechanisms wrap the strand









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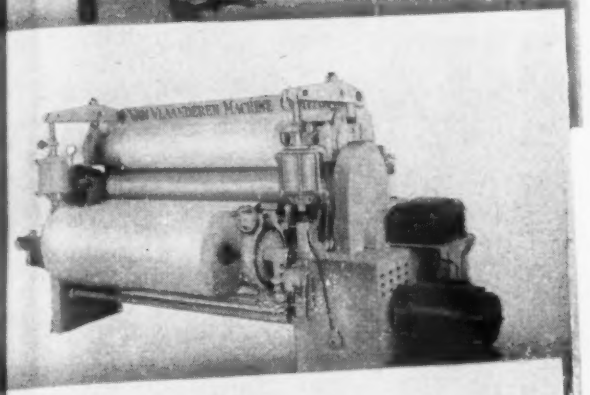

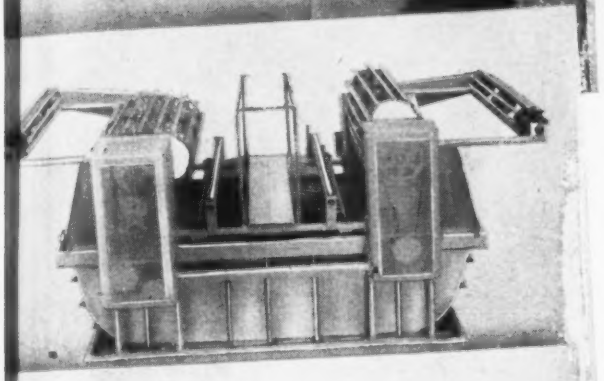

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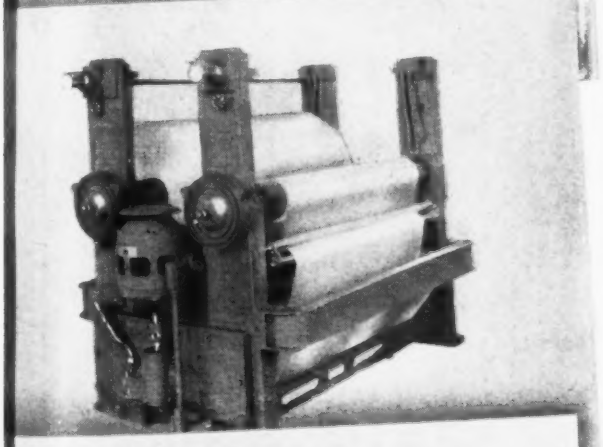

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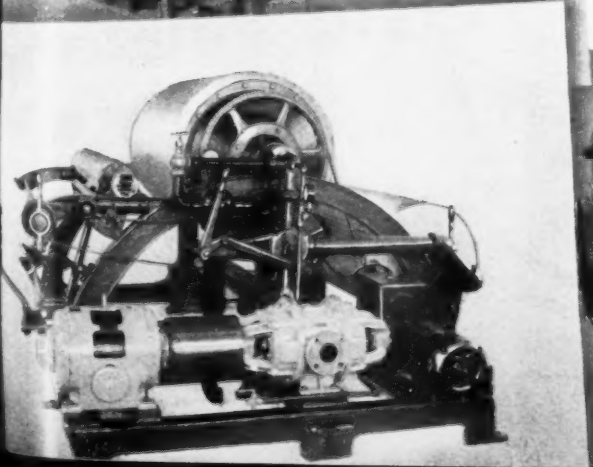

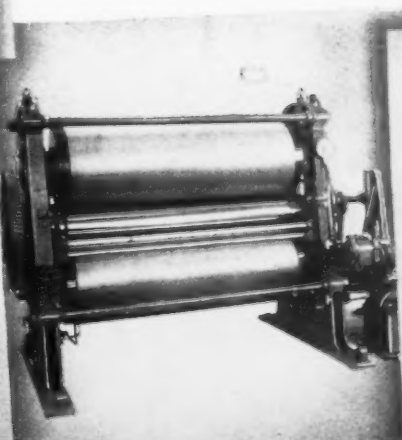

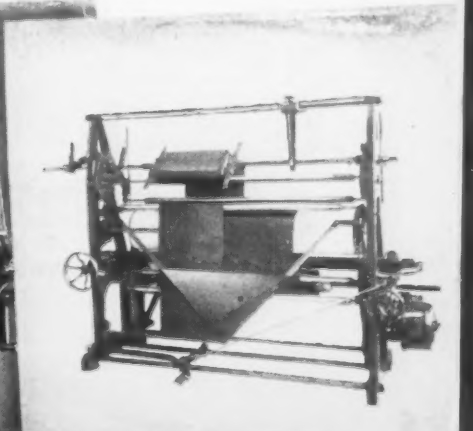

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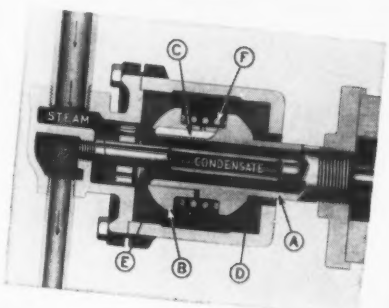
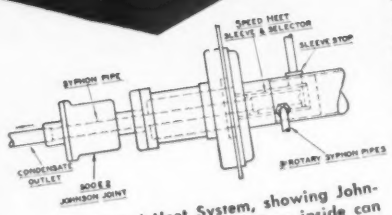


JOHNSON
Speed-Heet
SYSTEM

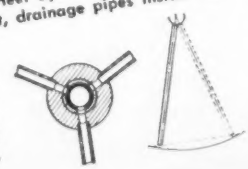
A multiple syphon pipe drainage system for large cylinders such as cotton slashers.

The Johnson Speed Heet System is aptly named. It reduces heating-up time considerably, permits higher and more even operating temperatures. A system of multiple drainage pipes is provided inside the can, rotating around a selector pipe which has an opening to register successively with these pipes as they become submerged in the condensate. Consequently condensate, air and gases are removed much more effectively than with bucket drainage. As worked out with friction-reducing Johnson Joints, this Speed Heet System at the same time reduces warp stretch and breakage. Installation is greatly simplified — internal flange is quickly machined from outside of cylinder by means of a portable boring fixture to receive Speed Heet System.



Johnson Speed Heet System, showing Johnson Joint at left, drainage pipes inside can at right.

Detail of drainage pipes, showing syphon pipe selector.



The Johnson Corporation

814 Wood Street, Three Rivers, Michigan

around the member for proper tension and use a presser paddle to make a firm package. The distance between the ball and the presser arm is shorter than the length of the fibers, so that the possibility of stretching the sliver is eliminated.

The creel is the roving-frame's most distinctive feature. It is very high and set quite far back of the frame. Balls from the finisher drawing frame are creeled in it and are fed to the back rolls by revolving the creel rolls supporting the balls. Creel rolls are turned by a chain and sprocket and a train of gears. The feed of the sliver and the take-up of the back drafting rolls must be synchronized very closely to avoid stretching the sliver. A very close control of this tension is made possible by using gears with a very fine pitch and by having a change gear of about 200 teeth. A change in the change gear of one tooth will change the tension $\frac{1}{2}$ of 1%.

The roving-frame drafting system is the same in principle as that of the drawing frames. There are three lines of top rolls covered with a synthetic and four lines of bottom rolls. The front, third, and fourth fluted bottom rolls are $1\frac{1}{8}$ in. in diameter; the second is $\frac{3}{4}$ in. in diameter and smooth. The middle top roll is prevented from contacting the second bottom roll by a button on each end so that the second bottom roll acts only as a control roll.

Close attention must be paid to the movement of the back line of rolls. With the creel being positively driven and the rate of the sliver fed from the creel being constant, it is very simple to note if the back drafting rolls are operating correctly. If the back roll of some particular spindle is not taking up the proper amount of sliver, the end will droop between the creel and the frame. This will cause the drafting of roving that will be weak and undersize. A condition of this sort is the result of top-roll slippage usually caused by negligence in lubrication or insufficient top-roll weighting.

TWIST MULTIPLIER. A very low twist multiplier can be used when making roving from worsted fibers, as compared to cotton. Twist multiplier ordinarily used is only 0.89. As the fibers are very long, this small amount of twist is sufficient to cause enough fiber interlocking so that the roving may be wound on the bobbin and drawn off without stretching. The low-twist multiplier is advantageous, as there is less fiber straightening to do when drafting on the spinning frame.

The drafting system of the spinning frame is a single-belt type. The belt,

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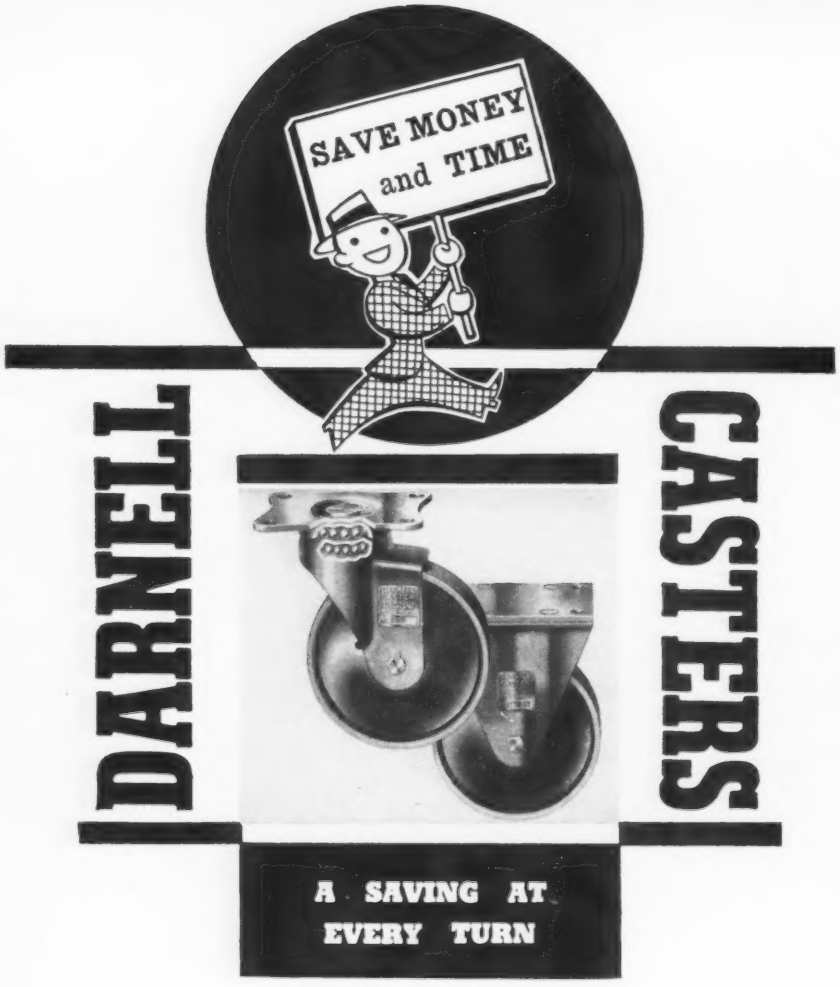

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or apron, extends from the back roll over a nose bar directly behind the front roll. There are two weighted top rolls and two self-weighted or control rolls. The weighted rolls are the first and fourth lines and are weighted by spring pressure. The back control roll is a standard cotton control roll with a cushion covering. The front control roll is replaced with a cast-iron roll of larger diameter and a satin-finish sandblasted surface. The one drafting zone on this system extends from the back rolls to the front. The importance of using a low twist multiplier in the roving is emphasized due to this type of spinning drafting system that does not have a break draft. The big advantage of the spinning drafting system is in the length of fibers which may be spun without cockling.

Since it is necessary to have a lubricated ring, a vertical ring of 2 in. diameter is used. Oil is preferred over grease as the lubricant, as a light traveler is utilized, and because heavy and sticky grease would tend to create undue drag on the traveler. The oil-lubricated ring is lubricated continuously by a small oil reservoir in the ring holder, giving a uniformly even oil film at all times.

The twister ring is also a vertical ring equipped with self-lubricating grooves. The yarn is light and is only two-plied, so that the lubrication of the traveler is recommended on this process also. A 3.50-in. diameter ring is used on a twister which is 5-in. gage. Although the distance between rings is 1½ in., the yarn is so expensive that separators may be considered a worthwhile investment. Separators will prevent the tails from the bobbin which has the end down from whipping around and breaking down other ends adjacent to it. This consideration is not so important in most cotton mills as the relative cost of the fiber is so much lower. Either a separator of the windshield type or the combination type should be used. The windshield separator consists of a blade fastened to the ring rail and extending to the top of the spindle, while the combination ring rail and beam separator is made in two parts. One section of the combination separator is fastened to the ring rail and protects the lower part of the traverse, the upper section of the separator is fastened to the roller beam and slides in contact with the lower section. This type of separator affords the greatest amount of protection.

TRAP MOTION. A two-ply trap motion is also installed on the frame as a means of reducing the waste of good singles yarn. Without the trap

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burns brightly to proclaim it!!

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motion, it is possible for one of the ends in the creel to break and for the other to continue being twisted until noticed by the operator. The trap motion consists of two blades located behind the twister roll. The top blade is fixed and the lower mounted on a pivot and held in place by a drop wire extending to a position approximately in line with the path of the yarn from in front of the rolls to the thread guide over the spindle.

As long as both of the ends are being twisted, the drop-wire is held in place and the yarn is allowed to pass through the opened blades to the twister rolls. However, if one of the ends breaks down, the drop-wire will fall. The falling of the drop-wire pivots the lower blade and swings it up tightly against the upper with a grip sufficiently firm to grasp the ends so that the pull of the roll will break down both of the single ends in the creel.

The arrangement of the rolls for the twisting of worsted two-ply is a single bottom roll with a one line of top rolls. The top roll is covered with cork; the bottom roll is made of case-hardened steel, having a diameter of 2 in. As the bottom roll is case-hardened, the wear of this roll is said to be negligible, so that there is not any need of having a traverse motion. A snub tension is fitted back of the rolls so that a constant, adjustable tension can be maintained on both of the ends being twisted together. This snub tension avoids irregularities in twist which will cause defects in the finished fabric.

A winder is used before and after twisting; and as this is a small unit, the same winder performs both duties. The package made by the winder is a cone 6.875 in. long with an 8° 4′ taper. There are two advantages in rewinding before twisting; namely, a larger supply package in the twister creel and the formation of a yarn of higher quality as it is mechanically inspected while being wound. The mechanical inspection is carried out by both a blade and a comb slub-catcher. These inspectors will break down the end whenever a thick place appears, caused by a soft gout, knot, or other defect. Such inspection is particularly valuable when the yarn is for the weaving of high-grade worsted fabrics in which any defect in the finished product means the loss of a considerably large area.

The cotton spinner has a distinct advantage over the Bradford or French process worsted spinner in trying to operate the new system, as the machinery and the adjustment of this machinery is more closely allied to the cotton industry than to the

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The initial action of Santomerse No. 1 is to reduce the surface tension of the water. This permits the solution to quickly perform its detersive or cleaning action, by forcing its way between soil particles and the surface to which they are attached. Particles thus removed from the surface are held in suspension. They cannot be re-deposited and are therefore effectively rinsed off and washed away.

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Xyno Resin AA 40 is a versatile general purpose, water-thin dispersion of especial interest to finishers of ribbons and piece goods in cotton, rayon and acetate.

Xyno Resin S 69 is another water-thin dispersion offering an unusual "springy" hand for fabrics, and particularly for nylon and other nettings.

Xyno Resin 362 is a viscous dispersion used for exceptional stiffness requirements, particularly on ninons, organdies, marquisettes and on cotton, rayon, acetate and nylon constructions generally.

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CHEMICALS FOR TEXTILE FINISHING

worsted. However, there are certain characteristics of wool which necessitate greater care than when cotton is spun.

The temperature and relative humidity of the mill are held to a more stable degree, and the range of the satisfactory atmospheric conditions is more limited. The most satisfactory conditions are a temperature of 80° F. and a relative humidity of 60%. Temperature and humidity together with the amount of oil present in the wool must be coordinated to control the generation of static electricity. The top is usually oiled by the top maker, so that it will contain approximately 2 to 3% of oil. A percentage of oil over this amount can be applied at the mill by using an emulsion attachment on the lapwinder. Additional oil is sometimes used to reduce the amount of static electricity generated, although this entails running the risk of applying so much oil that there will be excessive lapping-up of the fibers on the drafting rolls. Static electricity should be controlled by raising the humidity, with oil applied only in extreme cases. Both the heat and the relative humidity needs to be higher than is usual in the cotton mill.

Wool Finishing

(*Continued from page 125*)

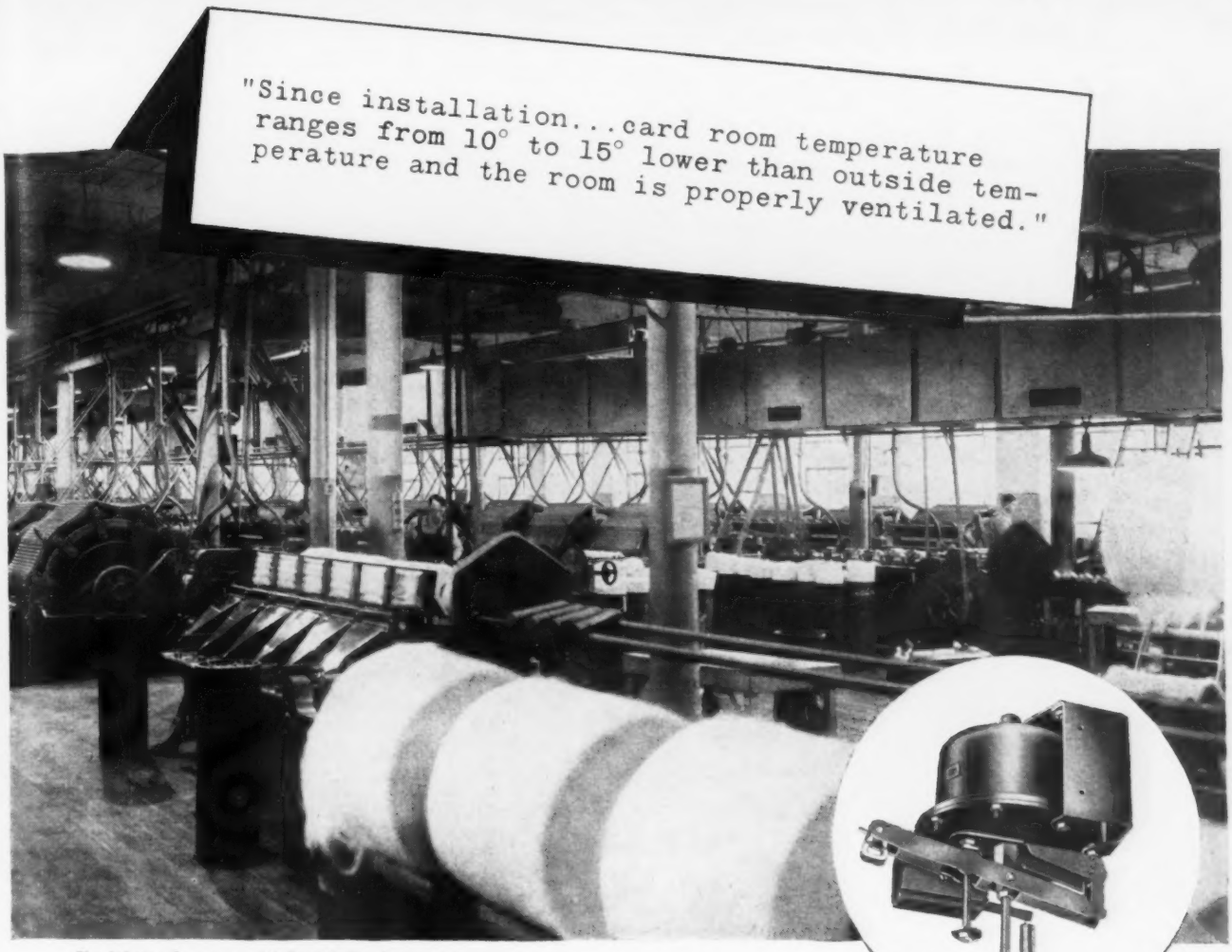
adsorption, conditions are ideal for getting penetration which does help to cover weaving imperfections.

What is the effect of diammonium phosphate in shortening the dyeing cycle with chrome?

That depends on the density of the fabric. Goodall, in England, advocates bringing up the temperature quickly, because he has collected data with some aggregated dyes like Polar Yellow where there is not much adsorption, or the affinity is low up to a temperature of 65° C. Consequently, he figured that the time up to the boil was wasted, as far as the dyestuff in the bath was concerned. His researches then led to adding the dyestuff at the boil, which shortens the dyeing process considerably. However, success with this method depends upon the construction of the fabric. Theoretically, it is all right as the fiber is being well swollen with the boiling liquor, and the sites for dye adsorption are increased. With the high pH of the diammonium phosphate, the dyestuff is held off at the boil and is given plenty of time to deaggregate.

Have any advances been made in air bath agitation to expedite dyeing?

I think that the question refers to

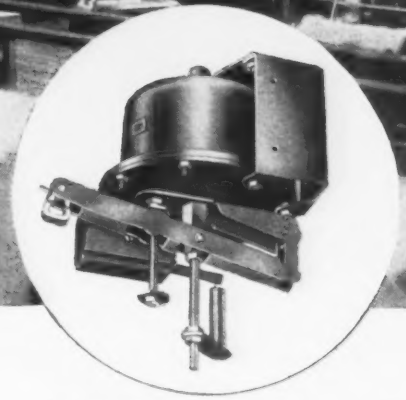

"Since installation...card room temperature ranges from 10° to 15° lower than outside temperature and the room is properly ventilated."

The Bahnson Company — *Air Conditioning Contractor*
J. E. Sirrine & Co. — *Consulting Engineer*

A North Carolina cotton mill, which installed air conditioning just before the war, reports that 6 years of operation have proved extremely beneficial in improving quality and eliminating regain losses. The Bahnson-Humiduct and Honeywell pneumatic control systems used cover virtually every phase of operation in the mill, including carding, combing, spinning, twisting, warping, winding and reeling.

Honeywell pneumatic controls are a standard feature of the Humiduct system. They hold relative humidity at 49 to 52% in carding, 52 to 55% in spinning and 62 to 65% in twisting. Temperature is held at 78° to 84° F. throughout the mill.

Take advantage of Honeywell's many years of experience in the field of industrial and commercial air conditioning by consulting with our engineers to recommend the air conditioning control system best suited to your individual requirements. Minneapolis-Honeywell, Minneapolis 8, Minn. In Canada: Toronto 12, Ontario.



Grad-U-Motor pneumatic power unit for operating and positioning air dampers

•

The Brown Instrument Division of Minneapolis-Honeywell supplies the Textile Industry with instruments and complete systems for the measurement and control of textile processes. Each unit of every control system is accurately co-ordinated with operating conditions to increase efficiency and production, and assure economical operation. They include controls for Slashers, Size Level, Size Temperature, Cylinder Temperature, Moisture Content, Continuous Bleach, Dyeing, Size Cooking and Storage, and many others.

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an article published in May, 1935, in the *Journal of the Society of Dyers & Colorists*, by Randall and Thomas, of the Imperial Chemical Industries, on the "Turbulent Dyeing of Wool Fabrics." Turbulence is promoted by air bubbling or vigorous ebullition at diminished pressure at 80° C. Increased rates of exhaustion and penetration were brought about by differential hydraulic and hydro-dynamic pressures on either side of the fabric, whereby a reciprocal pumping action of dye liquor through the fabric is induced. Also, vibrations and pulsations of the turbulent liquor resulted, which promoted the dyeing of the fibers.

I have been waiting to hear of a dyeing machine embodying the features mentioned above, but I do not know of any. Perhaps the war interfered with this development, but we should hear more from it.

Investigators have reported that the ratio of the thickness of the fabric to the surface exposed was a criterion for the successful turbulence-dyeing of the fabric. In other words, in the case of felts, where you have a higher ratio than you would have on apparel fabrics, the results were much more successful. One further advance may be made in this connection with the use of ultrasonic waves, which may produce a similar result.

Why not use muriatic instead of sulphuric acid in carbonizing?

One reason for not using it is that stainless-steel equipment is highly corrosive to hydrochloric acid; that will eliminate it to begin with. Another reason, according to the researches of Harris and Steinhardt, is that the chloride ion in solution has a lower affinity for wool than the sulphate ion. Accordingly, dyeing equilibrium is not established so rapidly as with an equivalent amount of sulphuric acid.

Explain why wool, which is undyed, darkens in shade when boiled with glauber's salt or plain water.

Water is a weak alkali, and when wool is boiled in a weak alkaline solution, hydrolysis takes place, and the cystine linkage in the wool molecule is broken. When that happens, there is a loss in strength. Also, there is a liberation of sulphur compounds. If the wool has impurities, like iron, which most wool has, there will be a darkening of the fibers.

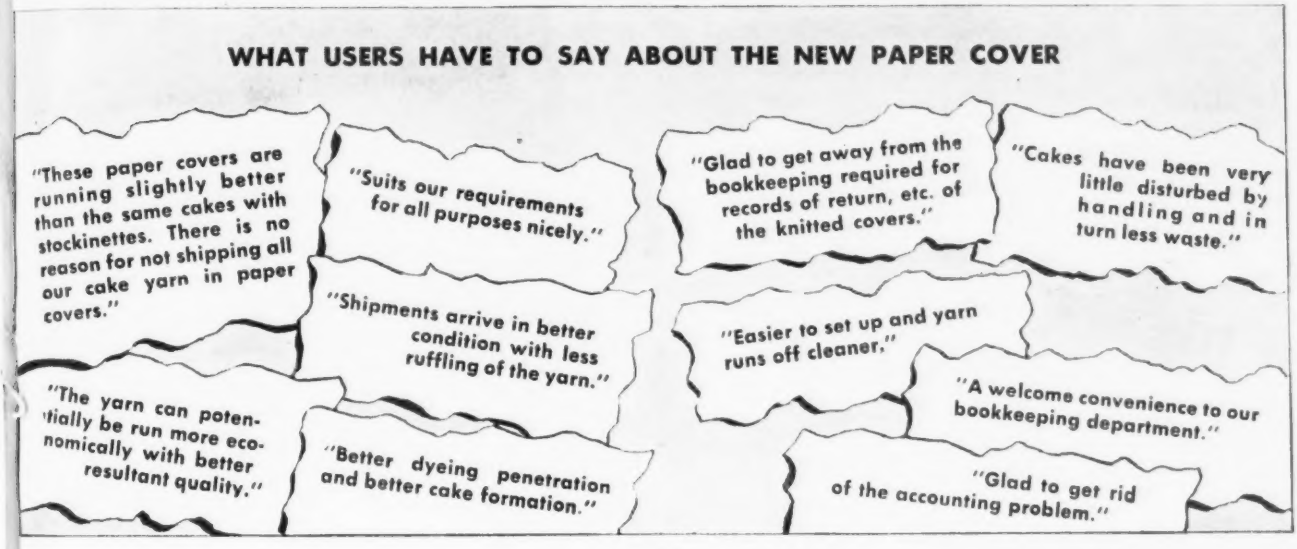
Is there any chance of developing completely fugitive throwster tints?

We now have fugitive tints, but there are factors that have to be taken into consideration in using any tint—1) where applied, (2) the twist of the yarn, (3) the fabric construction, and

Rayon Reports

Issued Monthly by American Viscose Corporation, New York, N. Y.

Enthusiastic Response to Disposable Paper Cover* for AVISCO Rayon Cakes

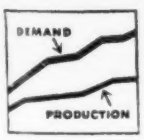

WHAT USERS HAVE TO SAY ABOUT THE NEW PAPER COVER
"These paper covers are running slightly better than the same cakes with stockinettes. There is no reason for not shipping all our cake yarn in paper covers."
"Suits our requirements for all purposes nicely."
"Glad to get away from the bookkeeping required for records of return, etc. of the knitted covers."
"Cakes have been very little disturbed by handling and in turn less waste."
"Shipments arrive in better condition with less ruffling of the yarn."
"Easier to set up and yarn runs off cleaner."
"The yarn can potentially be run more economically with better resultant quality."
"Better dyeing penetration and better cake formation."
"A welcome convenience to our bookkeeping department."
"Glad to get rid of the accounting problem."

The disposable paper cover recently introduced by American Viscose Corporation for its rayon cakes has won a highly favorable reaction from the industry. Users agree that it has many practical advantages over the knitted covers formerly used. Not the least of these is the elimination of the return problem, including bookkeeping, entailed by the old-type cover.

In addition, reports from the field indicate it is less likely to become disturbed in handling, thus cutting down on waste and promoting efficiency in unwinding and throwing. Users also find its permeability and wet strength make it possible to get excellent results from soaking, dyeing, drying and extraction.

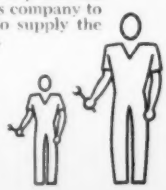
*Patent Pending

RAYON 20 YEARS AGO



NEW YORK, Sept., 1928—S. A. Salvage, President of the Viscose Company, predicts increased consumption of rayon during the next few years. He does not expect his company to produce enough to supply the demand for 1928.

NEW YORK, September, 1928—Figures on employment in the rayon industry show that the total wage earners jumped 38% over 1925.



BUCHAREST, ROMANIA, September, 1928—The first Romanian rayon plant is now under construction at Comarnic. A technical and administrative staff has already been engaged.

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It's your assurance of absolute buyer protection—and the reason for this is quite simple. Set up within the Company is the NAMICO laboratory, whose duty it is to test continuously the soap products we offer for sale. A corps of chemists and technicians, working with modern, scientific equipment, constantly check and test each soap product under all forms of operation. A soap product that cannot survive the third degree of our laboratory, we feel, is unfit to carry the good name of NAMICO into your textile mill. The buyer confidence thus maintained is the foundation upon which NAMICO has built its reputation for sterling products. For the best results in your mill, insist upon NAMICO products . . . you'll find it pays! NATIONAL MILLING & CHEMICAL COMPANY, 4601 Nixon Street, Philadelphia 27, Pa.

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Industrial Soap Products and Detergents

(4) the process of wet finishing. Certain pigment tints can be used under conditions which satisfy these particular requirements, and there is no trouble. On the other hand, if a pigment tint is put on yarn that goes into a crepe in highly twisted form, there is going to be considerable difficulty in removing it.

The so-called level-dyeing acid dyes are sometimes used as tints; these dyes, due to the wet-finishing processing or the yarn-conditioning operation, are likely to set in the wool fiber and partially dye it. It is a difficult problem to dye pastel shades on such fabrics. If we could have dyes of a very fugitive character, it would be a boon to the worsted manufacturer.

By Cy Byron of Barre Wool Combing Co.—On wool top.

Of what benefit is a highly sulphonated castor oil in dyeing chlorinated tops?

There are about 30 chlorination processes in use in the United States today, and my answer is based on the Harriset process which we use. We have never used any sulphonated castor oil on any of our chlorinated wools. However, I understand that some has been used to prevent harshness of the wool and also to act as a penetrant.

Are all milling and chrome colors of inferior fastness to washing when dyed on chlorinated wool fibers as compared to normal wool fibers?

We have not found that to be so. However, one must make the right selection, as chlorinated wool is in a heavy condition and will absorb color much more rapidly than unchlorinated.

Is it true that chlorinated top, when dyed, seems to exhibit a greater brilliance than unchlorinated top.

I would say that the Harriset process has a slight tendency to bleach the top. We have seen other processes that have decidedly damaged the wool fiber, and have, in some cases, yellowed the wool fiber. For instance, if you were dyeing yellowed wool with blue, there would be a tendency to green the blue.

Do you think that it is better to chlorinate wool top before or after dyeing?

We have not gone through all the dyestuffs to see if there is any effect with chlorination on the color itself. We feel, however, that there is more control of the shade by chlorinating before dyeing, instead of after.

What is the effect of the fiber lubricant on the dyeing of worsted tops?

As a commission firm, we get all

MANUFACTURERS' BULLETINS

A REVIEW of the month's outstanding trade literature. Items are listed one month only—no repeats.

Free FOR THE ASKING

1. **Counting picks** electronically in 40 seconds is described in a leaflet issued by Sjostrom Machine Co.

2. **Spinning calculations** are simplified in a recent issue of Platt's Bulletin.

3. **Waste machines** adjustable to staple length are illustrated in a pamphlet released by Carolina Machinery Co., Inc.

4. **Functional textile trucks** of fiber or steel are described in a booklet of Fisher Mfg. Co.

5. **A ball-bearing comb box** can save oil and allow cleaner work, according to an Aldrich Machine Works leaflet.

6. **Reducing seconds** with non-sloughing cams is covered in a sheet published by Precision Gear & Machine Co., Inc.

7. **Heavy Monel bellows** construction features a new ball-bearing rotary union described in a Perfecting Service Co. folder.

8. **Rolls for spinning frames** are discussed in an H & B American Machine Co. folder.

9. **Air-conditioning** especially tailored to meet textile mill needs is described in a Bahnson Co. bulletin.

10. **Nylon-sizing** formulas are given in a one-page addition to the DuPont Nylon Technical Service Bulletin.

11. **A truck dryer** for rayon cakes and skeins is described in a recent issue of Proctor Progress.

12. **"Rolling on Rayon"** is the title of a booklet on the story of tire development published by Industrial Rayon Corp.

13. **Bobbins of hiduminium,** an aluminum alloy, are pictured and described in a booklet issued by High Duty Alloys, Ltd.

14. **Rockwool insulation** is illustrated in a pamphlet released by Badham Insulating Co.

15. **Bramwell card feeders** can speed up production and cut costs, according to a Geo. S. Harwood and Son folder.

16. **Knitting stripes?** You will be interested in a recent folder prepared by H. Brinton Co.

17. **Quick selection of electric motors** is made possible with a guide released by Allis-Chalmers.

18. **Warp lubrication** by use of SLIX during sizing is covered in a pamphlet released by Southern Sizing Co.

19. **The bale-mixer** for attachment to the bale breaker is described in a folder prepared by Lummus Cotton Gin Co.

20. **Metered lubrication** of textile machinery is described in detail by a Bijur Lubricating Corp. pamphlet.

21. **Ultrasol,** a vinyl resin coating for fabrics, is discussed in a Monsanto Chemical Co. booklet.

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22. Warp drying can improve quality and weaving, according to a folder prepared by Industrial Heat Engineering Co.

23. Adjustable speed from a.c. circuits is described in a Reliance Electric & Engineering Co. booklet.

24. "Aluminum Sheet and Plate" is a booklet prepared by Reynolds Metals Co. It compares aluminum with other widely used metals.

25. "Weft" straightening using the reflected-light principle is described in a folder issued by Winson and Jerauld.

26. An elevator conveyor soon pays for itself, according to a bulletin released by Wehle Conveyor Co.

27. Mercury-vapor lamps and their industrial applications are described in a Westinghouse Electric Corp. bulletin.

28. Frictionless spinning bearings made of Slixonice are described in a folder prepared by Dixon Lubricating Saddle Co.

29. Pneumix, the air-motored agitator, is explosion-proof, according to a four-page folder which also gives mixer specifications. The unit is made by Eclipse Air Brush Co.

30. Carrying four drums at once with a simple attachment to your Towmotor truck is described in a leaflet released by that company.

31. Comparative yarn tables including these systems—cotton, denier, woolen, Manchester, linen, worsted, Hawick, Galashiels, Alloa, Aberdeen, and meters per kg.—have been published by Thos. D. Toy and Co.

32. Fire-protection equipment which has been approved is listed in a supplement to the 1947 Factory Mutual manual on that subject.

33. Wider cards are coming into more and more usage, according to a recent issue of Davis and Furber News.

34. Lubrication problems in the textile industry are described in a booklet available from Sun Oil Co.

35. A waterproof pulley lagging has been developed by Condersite Engineering Corp. and is described in a recent folder.

36. A new textile spool of magnesium which has flexible heads to prevent breakage when dropped is described in a folder prepared by Flex Spool Co.

37. Odor control and the benefits of good industrial housekeeping are discussed in an Oakite Products booklet.

38. Scientific instruments for research, testing, and quality control are described in a catalog issued by American Instrument Co., Inc.

39. Any questions? Those on strapping for packing and shipping can be answered by a booklet published by Signode Steel Co.

40. The Fidelity 400, a new knitting machine, is described in a brochure prepared by Fidelity Machine Co., Inc.

41. Specifications of A.S.T.M. thermometers are listed in a bulletin issued by Wm. Hergesell and Sons.

42. Pit, step, and tunnel lights of cast-iron construction are pictured in a bulletin released by Day-Brite Lighting, Inc.

43. Textile chemicals for manufacturing and finishing are discussed in a folder prepared by Hercules Powder Co.

44. Paint discoloration in dyehouses and bleacheries can be eliminated, according to a leaflet from U. S. Gutta Percha Paint Co.

45. Fire-retardant wood and its applications are discussed in a booklet announced by Koppers Co., Inc.

46. Decorative lighting effects along with a table on illumination design data are included in a booklet issued by Westinghouse Electric Corp.

47. "Syton for Woolen Spinning" is the title of a technical bulletin prepared by Monsanto Chemical Co.

48. pH and millivolt indicators are described and prices quoted in a bulletin issued by National Technical Laboratories.

49. A buyer's guide for ni-hard castings has been published by The International Nickel Co., Inc.

50. Marking crayons for nylon hosiery yarns and fabrics are reported upon in a Du Pont Nylon Technical Service Bulletin.

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kinds of lubricants and lubricating oils and emulsions. We are using lard mineral oil, and we have had no trouble. However, with knitting yarns or knitting tops sent us, we have difficulty with some of the fancy lubricants. Speaking in generalities, we are not and have not heard of too much trouble with lubricating oils on any of the worsted tops. The top does not stand around long enough for the oils to oxidize. The way the top situation is today, we haven't time to have it come out of the comb before getting it into the dye kettle.

In the matter of chrome dyeing, please state some points for and against the top, meta, and bottom chrome methods.

The general trend seems to be going toward the meta-chrome colors, though they are limited as to range, as yet. On the meta-chrome dyeing, you have more control of the color, inasmuch as you can take samples during the dyeing operation and stop at any given point. On the top chrome, you have no control of the color, until finally the color is completed, and then if the shade is off, you must make additions to the dye bath. Bottom chrome work is a lengthy operation, taking from 5 to 7 hr., but the colors are extremely fast, especially the anthracene blues. However, everybody tries to duck them with today's labor market. I favor the meta-chrome colors, myself, but as yet they are limited as to their range.

In Army O.D. top dyeing and blending, do you prefer to match fairly close to the government standard, exclusive of white, and do relatively minor blending to arrive at the exact shade; or do you prefer to have so-called base shades on the green, brown, and yellow sides? If you prefer the latter, how many base shades would you consider, and what would be their approximate shade with respect to the standard?

We have worn out the railroads going back and forth to Washington and Philadelphia on this very subject. To date, we are getting our pieces through without any trouble. We are running some on the cotton system in the South; therefore, we have to dry-comb it. We find that with a dry-combed top, against a top combed in oil, the white has a bearing on final shade.

We usually dye about three-quarters of our O.D., and then assemble the mix. From there, out, we make our corrections accordingly. We like to have three components. We have been ridiculed by some people, saying that they can get it with one. They start out with one, and they keep dyeing different batches until they have 30 or

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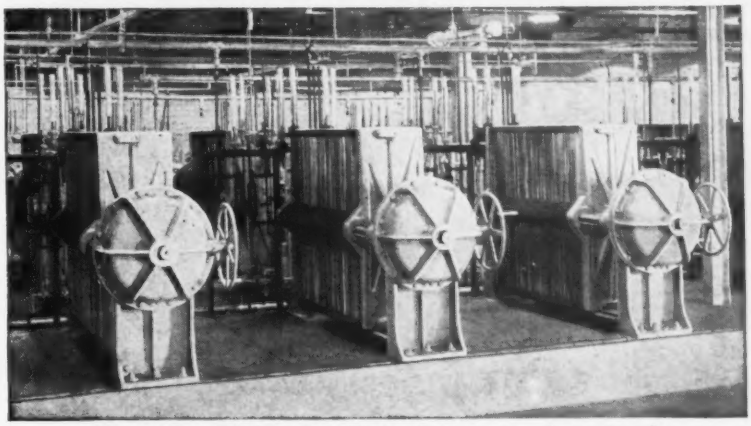

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We suggest that you give consideration to this process as a means of greater efficiency and economy in your plant. Our experience with production equipment has given us valuable information which may be of interest to you toward the solution of your problems.

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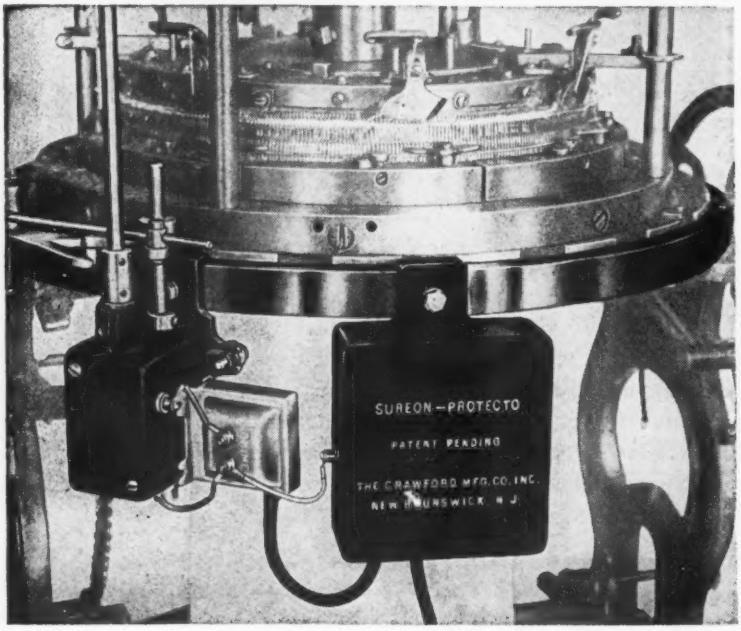

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The CRAWFORD SUREON-PROTECTO BOX has been designed to protect the knitting machine when the current goes off. If a fuse blows on the lighting line, or the transformer fails, or if the plug which is attached to the stopmotion is accidentally pulled out of the socket, the Sureon-Protecto Box will instantaneously and automatically stop the knitting machine. This prevents serious smash-ups. This box can easily be attached to Electric Stopmotions already in your mill, and may be ordered when placing new orders for stopmotions directly with us or with the machine builders.

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40. However, we find that we have more latitude by having three components, and we like to keep them on the green, brown, and yellow sides. We are thus able to control our O.D.

By Tom Malloy—On piece goods

Do you prefer a low or high initial exhaust in piece dyeing?

I have always preferred a reasonably high exhaust, as I have had better and more uniform results by boiling a color for possibly a ½ hr. and not having to make a large addition of acid. With little dyestuff left after ½- to ¾-hr. boiling, the results are more uniform and the boil has been shorter to get level results. If there is a fair amount of dyestuff to be exhausted and acid is added at high temperature, I have always found it necessary to boil the goods quite a bit longer. This procedure is satisfactory for level acid-dyeing colors. No one would use milling colors in a piece dye with sulphuric.

Do you prefer acetic, formic, or sulphuric in wool piece dyeing, and why?

I think all three have a place. With any colors that exhaust rapidly, one would naturally use the milder acetic acid. Also, in chroming, there is no choice; you would have to use acetic acid. In exhausting the chrome dyes, I would prefer to use some formic acid. I think shades become brighter. On certain types of colors like chromatrope that need a great deal of chroming to bring off the shade, I think that formic acid gives a greater reaction. On piece goods with acid dyeing, I prefer sulphuric acid. I have found that colors will level better. In my experience, such dyeing is more uniform than with acetic acid.

Do you prefer the level dyeing acid colors or the metallized acid colors?

I like the metallized colors. Every dyer likes them, because they make the dyeing job easy and cover up a multitude of sins. There are a lot of imperfections in cloth that will show up with a chrome dye, but metallized colors have much higher covering qualities.

Would you care to discuss the relative merits of carbonized versus uncarbonized dyeing?

I prefer to dye carbonized goods right from the carbonizer with the acid in them to pieces not carbonized coming right from the dolly washer. I have found better results, more uniformity, less shadiness, and more solid dyeing, using the goods right from the carbonizer.

Is a fabric made of worsted carbonized before or after dyeing

I have always found that it is hard

Laurel Boil-Off Oils and Compounds for more effective degumming of pure silk, rayon and cotton mixtures.

Laurel Emulsions and Softeners for better quality, better knitability, proper conditioning, proper regain.

Laurel Hosiery Finishes for softer, smoother appearance, greater freedom from snags, more wear.

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Yes, no matter what fiber or combination of fibers you are using, you will find there's a Laurel Product that will give you exactly the finish you desire.

For over thirty-nine years Laurel has been meeting successfully myriad challenges of leading dyers, bleachers and finishers. From this reservoir of experience and service has come the long line of Laurel processing agents to give you better, more efficient processing for every dollar you spend.

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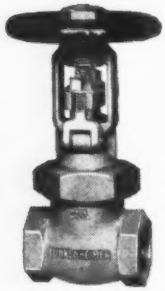
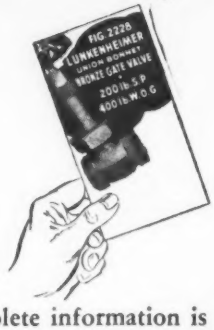
Fig. 2228—Screw Ends
Fig. 2229—Flange Ends
Double Disc
Rising Stem



O. S. & Y.
Union Bonnet
¼ to 2 inches
Fig. 2232 — Screw Ends
Fig. 2233 — Flange Ends
Wedge Disc, Rising Stem

Union Bonnet
¼ to 2 inches
Fig. 2230 — Screw Ends
Fig. 2231 — Flange Ends
Wedge Disc, Non-rising Stem



Complete information is given in Circular No. 534. Ask your Lunkenheimer Distributor for a copy or write us direct.

to regulate the shade, if carbonizing follows dyeing with the acid colors. I can get more satisfactory results in carbonizing before dyeing.

How does the fastness of metallized dyes compare with chrome dyes for light and perspiration?

As a group, the chrome dyes are faster. A few combinations of metallized colors will be as fast, and some not so fast; but the chrome dyes are faster all around.

What is the comparative fastness to abrasion between the chrome and the metallized dyes?

The chrome dyes are going to be favored again on that.

In metallized dyeing, do you add all the acid at the start or spread it along?

After carbonizing, we have a pretty low acid content, 3 to 4% on the weight of the cloth, but I always start the medium shades without any acid addition at all. When it comes to dark navies, dark browns, or anything like that, I add a small percentage of acid at the beginning. I have always found that it takes a lot more acid to dye uncarbonized goods than carbonized goods. I have always been able to dye metallized colors on carbonized goods with 5 to 8% acid without additions. On uncarbonized goods, I use 6 to 7% to start with, and add another 3% to exhaust. The dyes do not develop and penetrate so well if they are not carbonized, unless there is a larger amount of acid. We boil our metallized colors 1½ hr. altogether.

What size dye kettle do you regard as (1) the most economical for wool piece dyeing; (2) the best to produce the most uniform shades?

As far as economy is concerned, I think the size of the mill must be considered. A 6- or 8-string machine would be as economical as the larger 12- or 14-string machine. The latter takes longer to load; to get two loads a day, the operator might run into more overtime than if the mill had two or three 8-string kettles. The 6 to 8-string machine is best for uniformity.

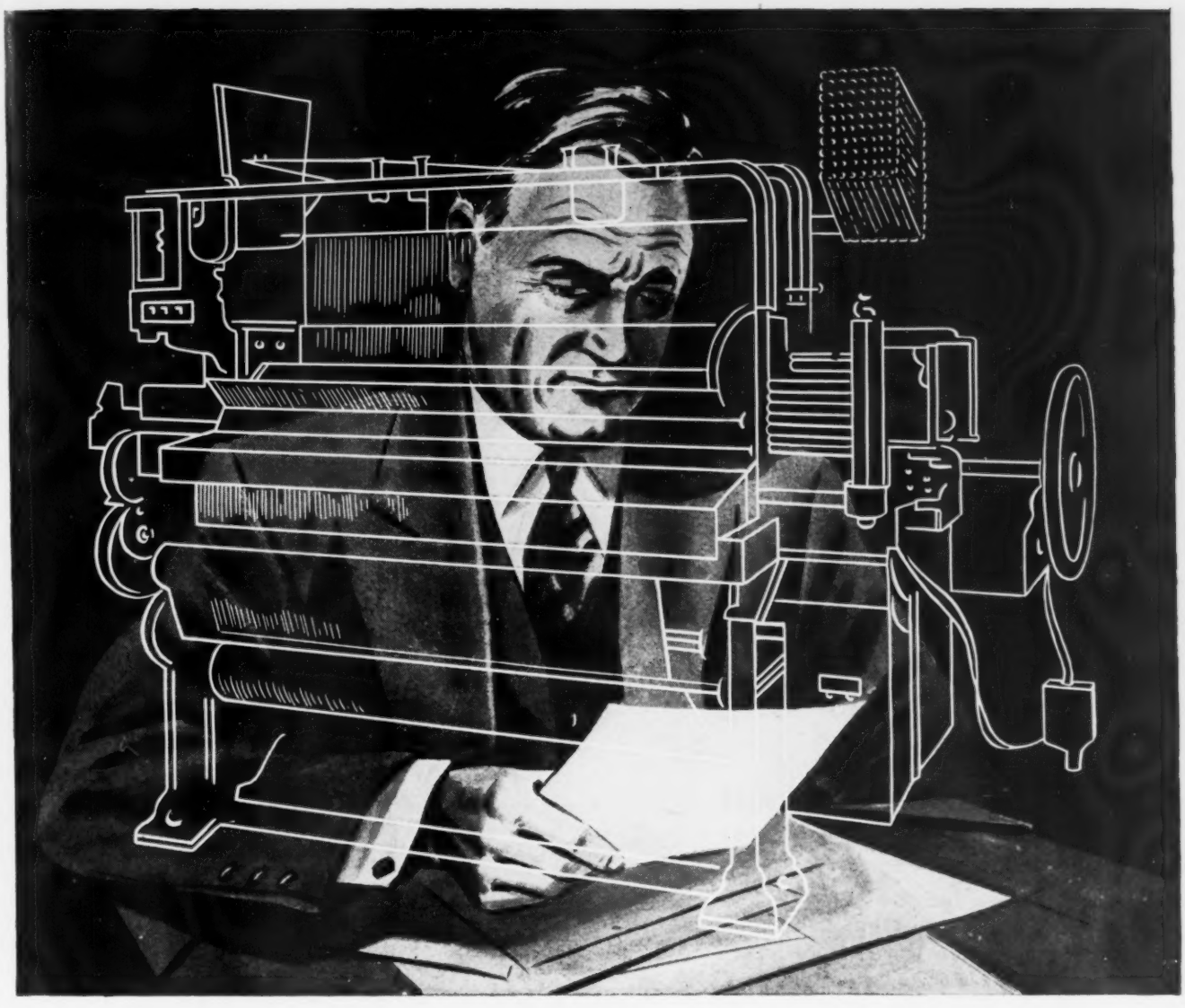
What is the best liquor ratio?

Some text books advocate liquor ratios of 1 to 30 or 1 to 35; but I prefer a more concentrated bath and have had good results with liquor ratios of about 1 to 20.

What is the maximum length of a piece for dyeing?

I wouldn't go above 100 yd. We have tried 120 yd., and I do not think that results are so good in going over 100 yd. The best results are had with 70 or 80 yd., although we dye 100 yd. satisfactorily.

(*Continued on page 278*)



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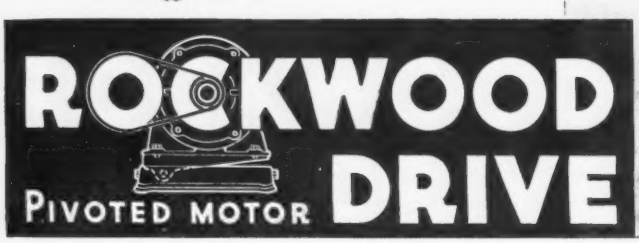

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Rockwood's expanded manufacturing facilities now assure delivery immediately, or according to any delivery schedule you determine!

(*Continued from page 276*)

What speed do you run?
From 40 to 60 yd. per min.

Which do you prefer as an assistant in wool piece dyeing—calcined glauber salt, crystal glauber salt, or brine solution of common salt?

I would rather have the crystal glauber salt, especially for light and pastel shades. There are less impurities in crystal glauber salt than in the calcined glauber salt. We dyed quite a bit with brine salt during the war; we were forced to do it. We got rather poor results, had more surface dyeing. I have since learned that we were using too small an amount of salt to get good results. The research committee has had good results with brine salt used in large amounts.

How would you avoid layer wrinkles and shadiness on a 16-oz., steam-finish, all-wool broadcloth?

Do not let the goods lie any length of time in the scouring machine. After dyeing, see that they are transported right to where you are steaming them; and as soon as you steam them, instead of laying them flat fold, roll them down and let them stand for 2 or 3 hr. Keep the cloth on rolls as much as possible.

By John Moran—On mixed fabrics.

In dyeing wool raw stock to which it is necessary to add a small amount of nylon to improve the tensile strength, must you add other types of dyes to cover the nylon?

On light shades, it is not necessary to use different colors, provided you choose colors that will go onto the nylon at the same time as onto the wool. However, it is not advisable to dye nylon waste with the wool. Most of the current nylon wastes carry waxes and some of the softeners should be removed before the color is put on to get the ultimate fastness both to light and washing. It is much safer to dye the nylon separately.

Can you tell us what colors to use to dye waste nylon fast to light and fulling in light shades; and how does one detect different types of nylon waste, and what are they?

I am familiar with three types of nylon waste, and they come in both delustered and clear: (1) Army waste, which usually is from parachutes and has long, coarse fibers; (2) underwear clips, which always contain a high percentage of softeners; (3) hosiery clips, which always contain some resins or waxes. To get the best fastness, you have to remove these substances.

The colors that seem to work best

Memo on Modernization

Hunter Continuous Range Piece Carbonizer

Another Modernization Program That Includes HUNTER EQUIPMENT

Pictured on this page is a new Hunter Continuous Range Piece Carbonizer installed at Colonial Woolen Mills as part of its modernization program.

Colonial Woolen Mills specified Hunter because Hunter carbonizing units guarantee, among many other advantages:

(a) Uniform tension on goods throughout the unit by means of the patented Hunter range drive, thus safeguarding tensile strength of the pieces.

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We invite you to write for a new eight-page bulletin as illustrated, which describes in detail the many other advantages of this modern Hunter method of piece carbonizing. A request on your letterhead will bring the brochure by return mail at absolutely no obligation on your part. Write

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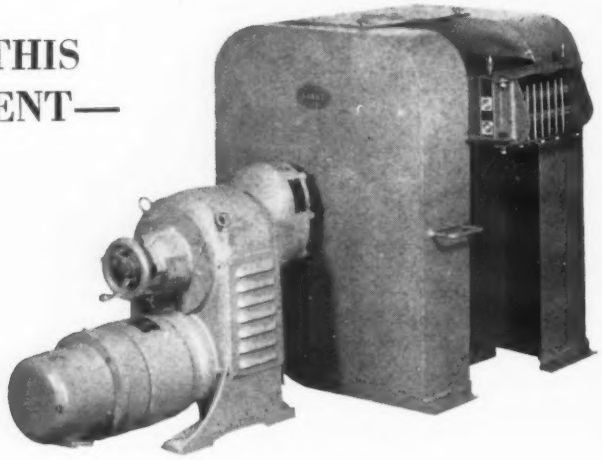

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Changing length of staple is simple, by an adjustment, easily made in less than twenty minutes. Variable speed drive is optional. for making this adjustment.

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for light fastness are some of the chromes, but the chrome must be kept at a minimum. Machine pressure is rarely over 5 lb. or the fiber is swollen to such an extent that penetration is not good. It is necessary to keep below the boil and never to be on the strongly alkaline side. All of the sizing compounds have to be removed.

With chrome colors, the pH can go down to 5.5. Chrome colors that exhaust below that point give too great color variation, especially when nylon is dyed with the wool. With nylon alone the pH may be dropped a little lower. When you have an excess of chrome, it seems to form a lake in the dye bath, especially if there is a little pressure in a closed machine, and that is deposited on the outside of the fiber.

Certain acid colors exhaust very rapidly on nylon; do you know any retardant to slow the exhaust up?

Start off with ammonium acetate and never let the bath drop below pH 6. If the acidity increases, most of the milling colors, especially when dyed alone, may precipitate in the bath, probably due to the delustrant which may be titanium oxide; that is one of the reasons you get a rapid exhaust. The dye is on the surface of the fiber and it never penetrates.

Which is easier to dye, the delustered or the naked nylons?

By all means, the bright nylons because people are not too fussy about what they use as a delustrant.

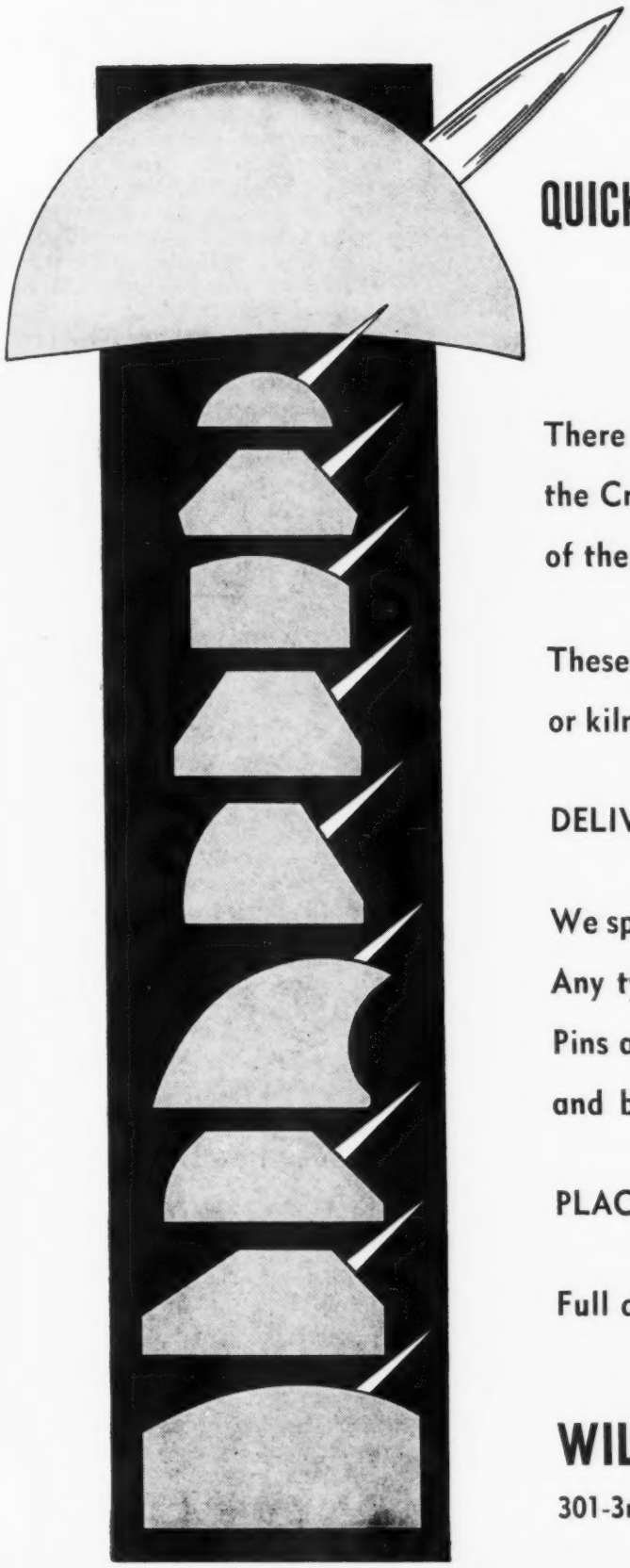
What causes light specks in carbonized all-wool pieces and how can they be eliminated?

Many of the light specks that appear in pieces dyed previous to carbonizing are caused by drippings from the top of the baker or from the guide rolls inside the baker which destroy the color. If one of the guide rolls is moving more slowly than its companions, it will pick up small amounts of dilute acid. As this acid picks up, it becomes more concentrated to the point where the droplets get big enough to fall on the goods. There is no definite pattern to the spots or marks, and, in the case of white goods, they will show up as resist marks. To avoid this defect, make sure that the guide rolls are all turning at the same speed. The metallized colors usually cover up these spots; they do not show up as they would with the level-dyeing acids or chromes.

Is automatic temperature control advantageous in all types of textile dyeing?

I would say "yes" because by the time an operator is sufficiently trained to control his kettle at the desired

Which of these **SLATS** *do you need?*



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temperature or water level, he is usually smart enough to get out of the dye house.

Have you had any experience with brook water during the different seasons of the year, particularly with reference to its effect on light shades and whites?

I have had experience with brook water and it offers a difficult problem without a system of filtering. In the fall, the trees shed and the leaves come down through the smaller brooks into the larger brooks, and finally into the mill pond, and they settle on the bottom. The effect of the tannic acid from the leaves is not too great until the ice forms. Then, if the mill pond is, let us say, 40 in. deep at the point where it is coming into the mill, it will probably have 18 in. of ice. The water supply is being drawn from the lower level where the deposit of leaves is built up.

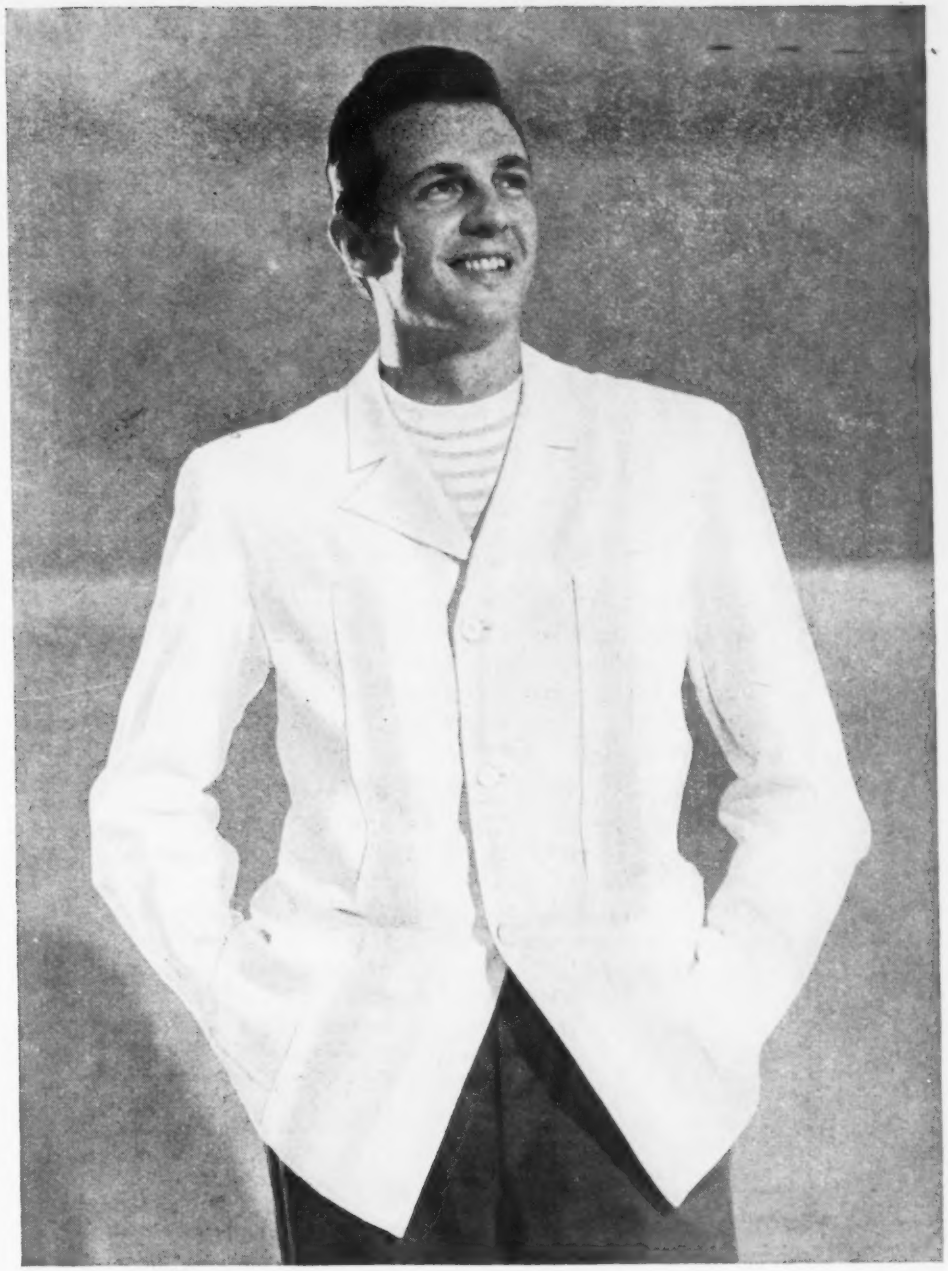
The only way I know to overcome this tannic acid stain on samples or on special sets without a filtering system is to dye a piece or two in the bath you are expecting to use, and remove the pieces from the bath; then use that liquor to dye the rest of the set.

Printing Problems

(*Continued from page 141*)

sodium - sulphoxylate - formaldehyde. Addition of the tannic acid to the print paste would create difficulties (besides producing poor-quality colors), so tannic acid is put on the cloth by a solution through which the cloth is passed in an ordinary padder. The goods are dried, tentered (if necessary), and printed with the basic dyestuff print pastes. On steaming, the color units with the tannin already on the cloth form a color lake. The lake is further fixed by passage through a tartar-emetic bath to form an insoluble color lake. A solution of tannic acid containing 2 to 3 oz. per gal. of liquor is usually sufficient.

Tannic-acid prepare has the disadvantage that an aftertreatment with tartar emetic is needed to fix the print colors. This aftertreatment may be omitted by using mordants of the Katanol type. These are sulphur derivatives of phenolic compounds. The first member of the series was Katanol O, obtained, it is stated, by the fusion of sulphur with O-chloro-phenol, the product being soluble in dilute sodium carbonate. The Katanol group of products resemble comparatively colorless sulphur dyes which have a fixing or mordanting action upon basic dyes. Their affinity for vegetable fibers makes them easy to apply. No subsequent fixation is necessary as for tannic



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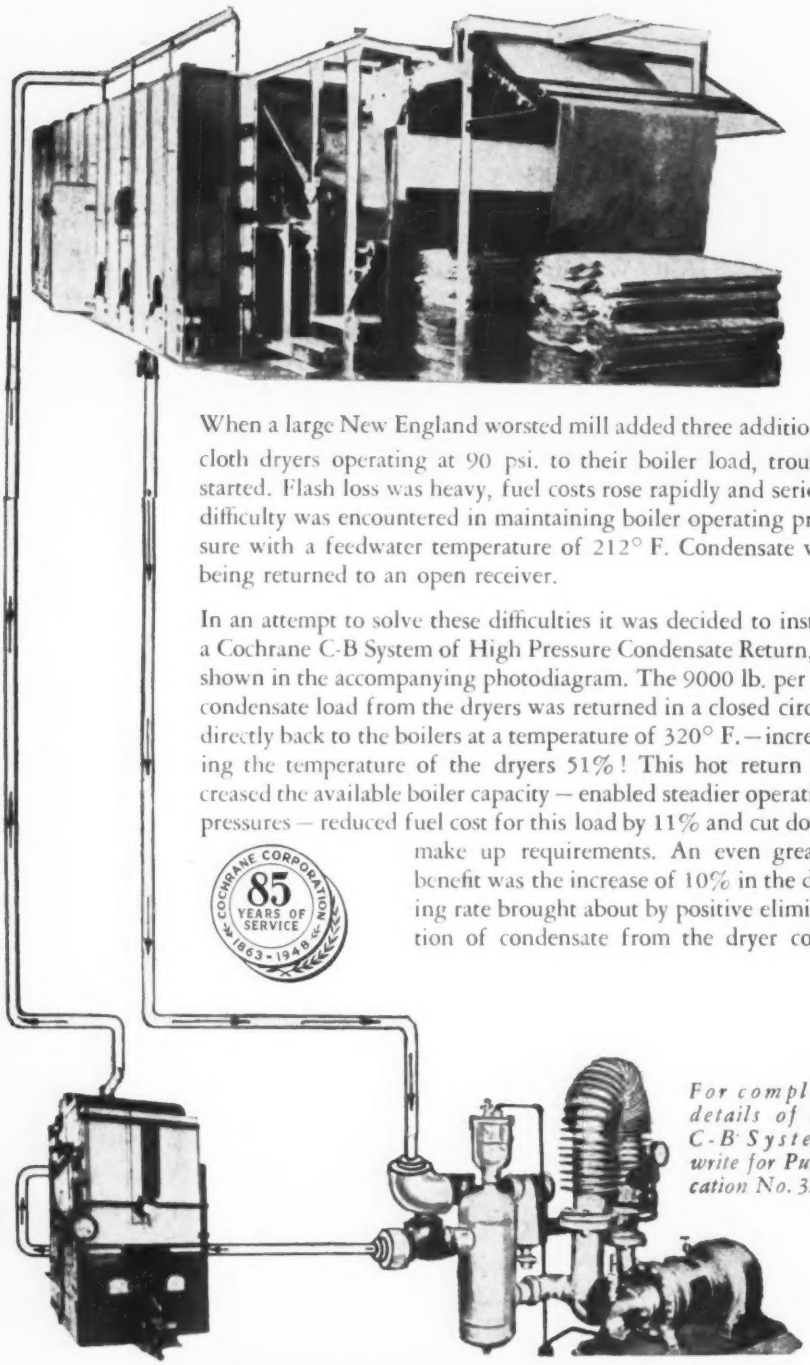

When a large New England worsted mill added three additional cloth dryers operating at 90 psi. to their boiler load, trouble started. Flash loss was heavy, fuel costs rose rapidly and serious difficulty was encountered in maintaining boiler operating pressure with a feedwater temperature of 212° F. Condensate was being returned to an open receiver.

In an attempt to solve these difficulties it was decided to install a Cochrane C-B System of High Pressure Condensate Return, as shown in the accompanying photodiagram. The 9000 lb. per hr. condensate load from the dryers was returned in a closed circuit directly back to the boilers at a temperature of 320° F.—increasing the temperature of the dryers 51%! This hot return increased the available boiler capacity—enabled steadier operating pressures—reduced fuel cost for this load by 11% and cut down make up requirements. An even greater benefit was the increase of 10% in the drying rate brought about by positive elimination of condensate from the dryer coils.

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For complete details of the C-B System, write for Publication No. 3250

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COCHRANE CONDENSATE C-B BOOSTER SYSTEM

OF HIGH PRESSURE, HIGH TEMPERATURE CONDENSATE RETURN

acid, and color lakes formed are not sensitive to metals, as are tannin color lakes. One disadvantage, when the production of white discharge effects alongside color discharges is contemplated, is the slight coloring action of the sulphurized phenolic mordants. Improved qualities however minimize the staining effect, so that white discharges and brighter color effects are possible.

NAPHTHOL PREPARATIONS. In producing print colors with stabilized azoic dyestuffs, the first component of the dye is put on the cloth prior to printing by an impregnation process. The impregnated cloth is then printed with the second component, the stabilized diazo compound or color-salt, in the form of a thickened solution or print paste.

The method of impregnation or preparing is important, and especially the drying. The naphthols are soluble in caustic alkali and are dissolved usually by pasting the naphthol first with turkey-red oil, adding the necessary caustic alkali which forms the soluble sodium salt, and forming the solution by the addition of boiling water. The cold dissolving process depends upon the use of alcohol and caustic, with just enough cold water to form a concentrated solution which is added to the bulk of the liquor made up, preferably with soft water for padding. Hard water will affect the solution by reacting with the sulphonated oil, leading to duller colors and loss of rubbing fastness in the finished goods. Naphthol solutions which are kept over should not be boiled up; warming with an addition of caustic soda will usually suffice. Where this heating does not bring the solution into good condition, it is wiser to discard the left-over liquor. Formaldehyde is sometimes added to the naphthol solutions to improve their keeping qualities, but naphthol so treated is much harder to remove from the cloth later. Clear white grounds are therefore difficult to obtain.

The affinity of naphthol solutions is lower at high temperature. The lower the affinity, the more level the impregnations will be. Impregnation is therefore carried out at 175° F. using as small a mangle box as possible. Usual procedure is to use a three-bowl mangle. Two wood bowls and a middle brass bowl are preferable, especially if spun rayons are processed. The goods are squeezed to 80% expression and led over drying cylinders or through a hot-flue dryer. Prolonged drying is not recommended; neither should the drying be too concentrated.

Goods must come off the dryer perfectly dry. Any trace of moisture

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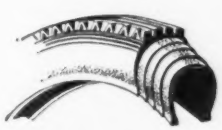
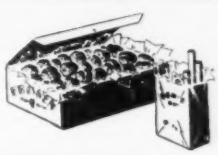
WOOD CELLULOSE ▶ *is dependably uniform*

Rayonier's wood cellulose is supplied in several grades to provide the special characteristics required for manufacture of the various types of products in which cellulose is used.

Quality control in production of these high-alpha grades of cellulose assures the constant purity and uniformity required in making viscose and acetate fibers, cellophane, and various cellulose derivatives.

In addition to development of new and improved grades of wood cellulose, one of the principal functions of our research staff is the study of the processing characteristics of our products under conditions similar to those found in our customers' plants.

Principal	Grades of Rayonier Wood Cellulose
	"RAYACETA" is a highly purified wood cellulose specially developed for the production of cellulose acetate fibers. It also is used in the manufacture of acetate films and sheets for packaging purposes.
	**"RAYOCORD"** wood cellulose is a highly purified product especially suitable for the production of viscose yarns of high tensile strength. It is widely used in the manufacture of tire cords and for textile yarns where maximum strength is desired. It is also a good material for the production of saturating papers and vulcanized fiber.
	"HICOLOR" is an established grade of purified wood cellulose for the production of viscose fibers and yarns of high quality. It is also used as a base material for vulcanized fiber and related products.
	**"RAYAMO"** is a wood cellulose specially developed for the making of cellophane, used increasingly as a protective covering for fruits, vegetables, cigarettes, candy, and numerous other packaged articles.

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will indicate that volatilization has taken place; and this leads to unevenness in the print shades produced, especially in blotch styles where large masses of color have to be fixed on the cloth. A reasonable excess of naphthol is always preferred in print styles to insure the fixation of the maximum amount of the diazo component.

Where poor fixation does occur as the result of uneven impregnation or through lack of naphthol, the excess diazo solution washes off in the final process and stains the white ground by interaction with residual naphthol in the unprinted parts of the pattern.

RESIST SALT. Resist-salt preparations are used in discharge printing to counteract scumming of the dyed grounds by the discharge print paste. The latter may be white or color discharge, and color discharges may be either vat or basic dyestuff print pastes.

Salts are easily soluble, being the sodium salt of m-nitro-benzene-sulphonic acid. A solution of 1½ to 3 oz. per gal. is used in the padding mangle when tentering goods for printing, according to the weight of the discharge paste used. With strong white discharges on heavy grounds, the risk of scumming is naturally more present; but even on light grounds the risk is there, and precautions are necessary.

Many dyed grounds are not so much the result of the discharge effect of the print paste as of carelessly prepared print pastes. Imperfectly filtered solutions of reducing agents, carelessly prepared thickenings, and badly strained print pastes are responsible for trouble of this nature. Even resist salts on the dyed material prior to printing will not suffice to counteract all the possible mishaps. Where this happens, the degree of damage can easily be estimated by steaming a small piece. If the goods are still faulty, a further padding of the printed-and-dried goods with a thickened solution of the resist salt on the printing machine with a fine cover roller will be necessary before the goods can safely be aged or steamed.

It is important to filter the solution of the resist salt before it is applied to the cloth. In one instance where trouble was recurring frequently, the resist salt was itself at fault. The delivery in use contained insoluble matter in the form of fine grit, etc. The operator responsible for preparing the solution had neglected to filter it, with the result that the insoluble matter was dried into the cloth and was dislodged during printing. Some went into the color-box of the machine and underneath the edge of the doctor blade. Cleaning action of the blade was interfered with to such an extent that scumming

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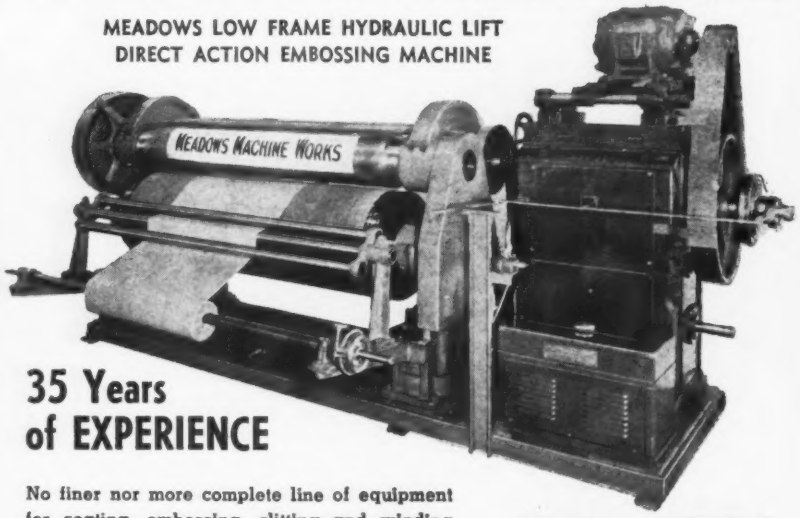

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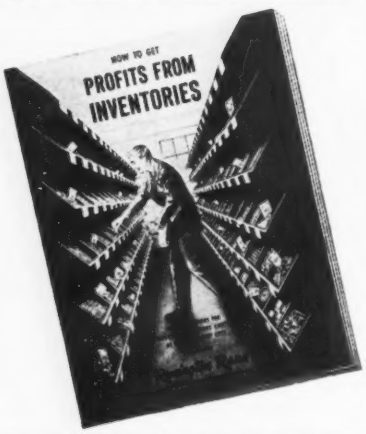

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took place. The surface of the engraved roller was also damaged slightly. This trouble could have been avoided by careful filtering.

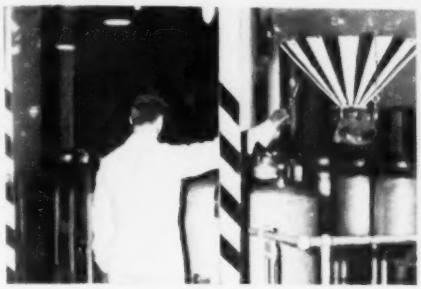
GUMS. In gum preparation, a slight stiffening is imparted to the cloth. In one case, it was desired to prevent the creasing of a very soft handkerchief cloth in ageing after printing. The ager in use was of the roller type and as a result of the tension set up as the cloth passed over the rollers, a certain amount of creasing took place. This led in turn to marking-off with vat dyestuffs in the print pastes. When a very slight degree of stiffness was imparted to the goods before printing, marking off did not occur. The stiffening agent used was a weak solution of British gum, industrial gum, or dextrin. Well-calcined quantities of such gums are soluble in water, and the preparation of suitable padding or preparing liquors is a simple matter.

In one instance, however, unexpected trouble arose because of a certain insoluble portion in the gum solution. Presumably, the gum itself was faulty in the first place.

In printing the cloth which had been gummed in the preparation, dried-in gum began to dust out as the cloth passed through the nips of the printing machine. Eventually, this dusting-out process resulted in gum depositing in the engravings of the copper rollers. Inferior printing impressions resulted. However, when brush furnishers were substituted for the plain covered-wood furnishers, it was possible to keep the engravings clear of gum deposits.

Gum tragacanth in a very thin solution was useful in one printing a Bemberg* crepe. The cloth was a crepe construction—Bemberg crepe filling and viscose warp. Even after the usual special print preparation, using sulphonated oil, a good printing impression was not obtained. The goods were handkerchief prints, and penetration was an essential feature. Trials showed that a very slight degree of moisture in the cloth would bring it into good condition for receiving the print impression. To apply such a slight degree of moisture evenly over the whole surface of the cloth, a fine cover roller working in the first nip of the printing machine was used and supplied from a color-box filled with a very thin solution of gum tragacanth (or locust-bean mucilage—either will do). Two points must be kept in mind: (1) too much moisture will cause the print pastes to bleed, and (2) too much thickening or mucilage will cause the print pastes to be resisted to some degree. If these conditions are avoided, good printing

VISIBILITY. Color Conditioning eliminates glare . . . reduces eyestrain and fatigue . . . provides the correct degree of "brightness" within the worker's field of vision.



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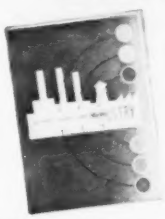

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impressions can be obtained on cloth which would otherwise be nearly impossible to print in the ordinary way with engraved rollers.

Similar cloths present no difficulty at all in screen printing. The amount of print paste applied is so much greater that furnishing troubles do not arise. Also, in using such methods, lack of care will result in the last state being worse than the first.

Mention was made of the difficulty of obtaining a good printing impression on cuprammonium crepe cloths. This is a common fault where penetration of the prints is of prime importance. The use of sulphonated oil is recommended, especially of the highly sulphonated wetting-out types; and in most types of printing on such cloths it will usually give improved results.

When especially difficult cloths are encountered, special measures will have to be taken. The main fault is usually the unreceptive and hard nature of the Bemberg yarns in the tensioned state as they pass over the bowl of the printing machine. Tests showed that improved printing results were obtained by the addition of a little extra fatty matter in the form of soap to the sulphonated-oil preparing liquors. But too much should not be expected from such special preparations.

The same type of preparation gave greatly improved results in two difficult cases: (1) printing Bemberg crepe warp and viscose-filling handkerchief cloth with acid and direct dyestuffs by the urea process with engraved rollers, (2) printing medium-weight spun-rayon dress goods with vat colors. In the latter instance, the improvement in the depth and levelness of the colors produced was marked. The softening and lubricating qualities of the soap-sulphonated-oil preparation gave the cloth qualities of absorption and softness which had previously been absent.

Striped Knitting

(*Continued from page 139*)

AVOIDANCE OF SPIRALS. A new situation arose when the high-speed, 64-feed knitting machine came into the field. Due to the large number of yarns going into the circumference of the tubular cloth at each revolution, the yarn-dyed stripe does not knit in a horizontal position but appears as a spiral. As this is a cloth-construction problem rather than a finishing problem, it is usually solved by splitting the cloth on one side through its entire length, and rematching the stripes so that they fall normally at right-angles to the cloth's edge. The

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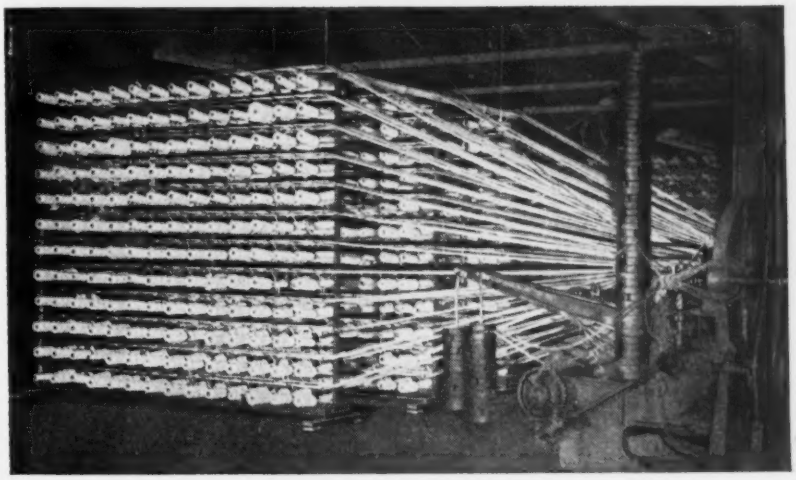

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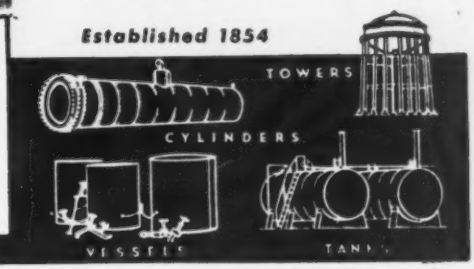

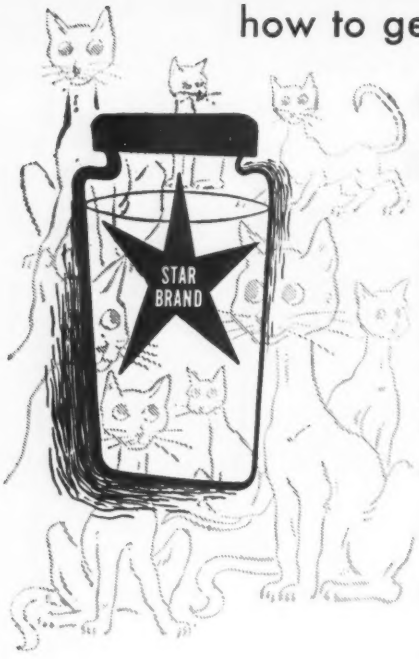

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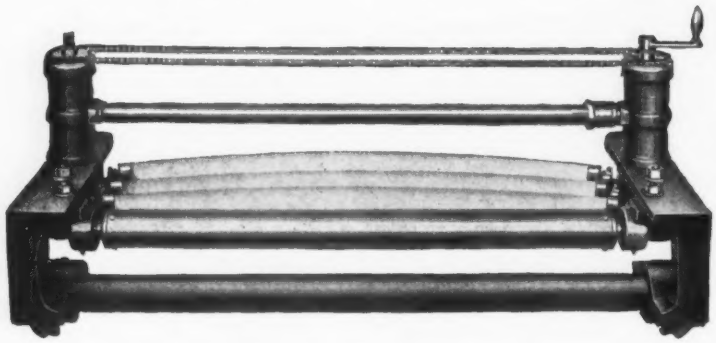

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split side is then sewed up so that the cloth becomes tubular again. Another method of handling this problem involves splitting the goods and finishing flat on a pin-tenter frame. However, with this latter method, the cutter would have to learn a new system of cutting the goods and there would be no particular saving since the sides of the shirt would have to be sewed together to restore the tubular condition.

The frictional effect of the horizontal spreader has been overcome on a calender equipped with a set of rubber wheels fitted just outside the spreader traveling at the same speed as the calender. These wheels rotate and help to push the goods along by overcoming the friction at the spreader edges. However, while the edges of the cloth are straightened, there is still a bow in the center of some cloths which can be compensated only by two runs of the cloth through the calender.

This rubber-wheel attachment has been improved by providing a variable-speed drive for the rubber wheels. The operator can adjust this speed faster or slower as the goods require. A special type spreader provides space for the rubber wheels and facilitates the passage of the cloth by equalizing the friction of the cloth on the spreader. This system processes the stripes in true horizontal fashion and is currently the proper means of finishing polo-shirt stripes. As this machine straightens the courses and wales of the knit fabric, it is ideal for proper finishing of cloth in solid colors as well as striped cloth.

Slasher Room

(Continued from page 131)

till the water is mixed thoroughly with the size. It is then run off to the storage tank, where it is maintained at a temperature of 208 to 210° F.

Only sufficient size is made each day to meet production requirements. If any size is left over, it is washed down the drain; and all kettles, storage tanks, and slasher size boxes are thoroughly cleaned.

DRAINAGE. Slashers, cooking kettles, and storage kettles are mounted on a concrete base, the pitch of which is to a central floor drain to aid washing and to insure dry conditions around all equipment. Beams are handled by a hoist on an overhead-rail system.

The three cooking kettles are so connected that in an emergency one can be cut out and the remaining two carry the load without appreciable loss

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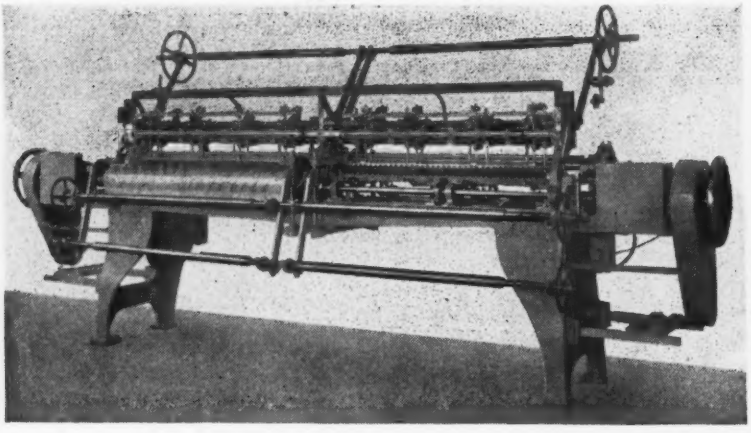

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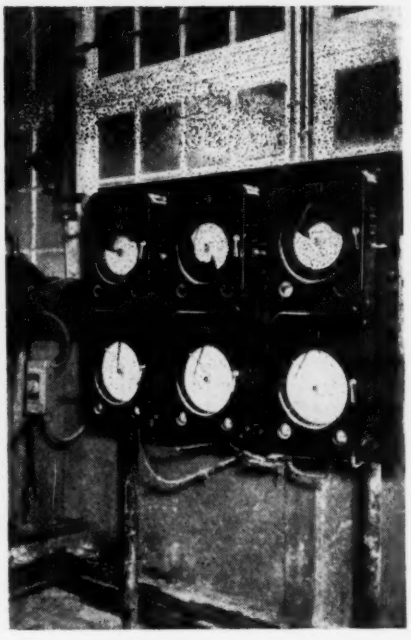

Automatic control instruments, mounted near the kettles, remove guesswork in cooking time and in cooking and storage temperatures.

in production. A spare pump has been installed to meet an emergency. All steam and size piping was installed overhead, while condensate returns and floor and size drains were placed under the concrete floor.

Each slasher is equipped with two hoods connected to a central vent, through which hot air is exhausted by a fan. There is a hood, also connected with exhaust vents, over each of the cooking and storage kettles.

For general working comfort, a window exhaust fan was installed. All steam pipes are insulated. Steel racks for storing empty and full beams were also provided.

Drawing Sliver

(*Continued from page 124*)

how to overcome excessive short-length variations in the fibers.

A sliver tester was used to gage the results of mill experimentation reported here. Among the factors found to produce favorable results in sliver quality were replacement of top rolls, correct distribution of draft, proper roll settling, attention to tension, and adequate cleaning.

Systematic replacement of top rolls became one of the assurances of top quality drawing at one mill. An old idea prevailed among the supervisors that only the front top roll required careful inspection and systematic replacement. This roll was merely moved to the second-roll position when it ceased to operate satisfactorily. But

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Textile World

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tests showed that all top rolls must be in good condition if maximum quality is desired. Of course, the wear on the front top roll was greater because of the increased speed and draft. But since all of the top rolls had composition covers, it was a simple, low-cost operation to rebuff and replace them systematically. When this was done, the top rolls gripped and drafted the fibers more uniformly than before.

PROPER SETTING UNKNOWN. There were so many influences upon roll setting at the mills that no specific recommendations could be devised for all conditions. The most important factors of roll-setting techniques were staple length of the cotton or rayon, speed of the rolls, draft, and type and diameter of rolls.

It was found that the staple-length basis for roll setting should be that of the staple length at the drawing frame and not that of the cotton or rayon in the bale. Fiber arrays of the cotton from the bale and of the sliver from the drawing frame and card showed that the latter were considerably longer than the former.

Text-books instructed mills to set drawing rolls a certain distance from the classified length of the cotton. They are misleading. When followed, this rule results in pinching and breaking of fibers on the drawing frame. In some of the mills upon whose experience this article is based, the old textbook rule was followed. As a result, fibers were broken on the drawing frame, and full yarn strength was never obtained from the spinning frame.

When it was understood that cotton fibers were longer at the drawing frame than in the bale, certain allowances were made for the increased lengths. By setting the front-to-second-roll distance slightly more than the maximum length of the fiber at the drawing frame, the mills eliminated fiber pinching and breaking. They also obtained more accurate control of the fibers during drafting.

The third and fourth rolls were set $\frac{1}{8}$ and $\frac{1}{4}$ in. wider than the front-to-second-roll setting, respectively. The increases allowed for the larger bulk of sliver at the back rolls. All metallic rolls were generally set $\frac{1}{16}$ to $\frac{1}{8}$ in. wider than cushion rolls.

MILLS GAGE TENSION. Careful attention was given the tension upon the sliver between the front roll and the calendar rolls. Excessive tension at this point offsets the advantages already obtained at the drafting rolls. Correct and uniform sizes of trumpet holes maintained even tension on all

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Install new and improved size kettles and controls and eliminate many of your sizing problems.

Our mill-tested, standard kettles are available in 3 body metals:

Cast Iron (*lined with 48 ounce copper welded in place.*)

Solid Copper (*8 guage.*)

Stainless Steel (*12 guage.*)

Each furnished in 110, 160, 250 or 360 gallon capacity.

Top and fixtures are expertly fitted. Semi-elliptical filling doors equipped with handles.

Single motion brass stirrers, and baffles for superior agitation and uniform size mixing.

Vertical agitator shaft, operating in rigid step bearing, is driven by smooth-running bevel gears mounted in cast housing. Equipped with a 14" x 2" T & L pully for 100 RPM or individual motor drive.

Kettle is tapped for steam pipe connection and equipped with Brass heating coil. Automatic regulators for accurate control furnished on any style kettle.

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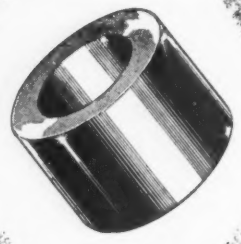

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SELF-LUBRICATING ○ EXTREMELY DURABLE ○ CONSTANT CO-EFFICIENT OF FRICTION ○ OPERATES DRY — OR *SUBMERGED IN WATER, GASOLINE OR CORROSIVE LIQUIDS* ○ APPLICABLE OVER A WIDE TEMPERATURE RANGE — *even where oil solidifies or carbonizes* ○ EXCELLENT AS A CURRENT-CARRYING BEARING.

GRAPHITE METALLIZING CORPORATION

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deliveries after the trumpet gage was used on the drawing frames.

The tapered trumpet gage detects wear or other variations in trumpets. However, one difficulty was encountered with the gage, it indicates only the smallest dimension of the hole. Thus, when trumpets were worn ovally, the gage did not always indicate the full extent of the wear. Card-room overhaulers overcame this difficulty by holding the trumpet against a strong light with the gage inserted in the nose of the trumpet. In this position, any enlarged dimension of the trumpet was readily detected. The worn trumpets were replaced and later were drilled out to a larger size.

Other operating details at the drawing frame were considered minor ones, yet became important aids in the over-all program toward better quality of sliver. Clearers, of course, were picked at regualr intervals and only when the frame was stopped for doffing. This practise permitted the removal of small particles of waste that fell on the stationary strand of sliver. With the frame in motion, the waste particles had been carried into the finished sliver and into the yarn. Strict supervision was given cleaning and oiling so that the work would not be spoiled. Imperfect piecings were reduced to a point never previously attained, thanks to training of operators and follow-up supervision.

Numerous tests on the sliver tester showed that cushion rolls delivered a more uniform sliver from the finisher draw frame. Metallic rolls held the larger bulks of sliver more firmly on the back rolls and on some breaker front rolls. The new five-roll draw frames had metallic rolls on the two back rolls and cushion rolls on the three front lines. Maintenance expense of metallic rolls was very low, since they required no varnishing or buffing. However, close attention was given the conditions of metallic-roll collars. These collars prevent the bottoming of flutes, but when badly worn may become a troublesome source of bad work. Usually, these collars were ground slightly smaller than the roll diameters, as follows:

0.07 in. smaller for 16-pitch roll.
0.06 in. smaller for 24-pitch roll.
0.045 in. smaller for 32-pitch roll.

In figuring draft and production calculations for drawing-frames with metallic rolls, the table of equivalent diameters shown as Table 1 was used. The correct distribution of draft to secure the greatest possible amount of fiber control between the rolls is generally established by the machine builder. Changes in this original distribution may be advantageous to the mill. The main principle involved in draft distribution is that of reducing the weight per yard by the same number of grains in each drafting zone. When followed, this principle of distribution assures that the back-roll draft will be low and that succeeding drafts will be higher. The highest draft comes between the first and second rolls.

The theory behind this method of distribution is that low drafts work more readily on the heavier bulks of sliver in the back rolls, and that higher drafts are more feasible on the smaller bulks of sliver at the front rolls. Two examples of draft distribution used by mills to recheck old frames are given in Table 2.

An interesting use of this table was made by one large card room. The supervisor experimented with various ends-up on one-process drawing and found that 8-ends-up drawing produced a sliver with more parallel fibers than the 6-ends-up drawing. The draft distribution table was followed precisely in both 8-ends and 6-ends drawing. It was believed that the increased draft in the latter drawing brought about the more parallel position of the fibers. By referring to the table, it was noted that the first zone draft of the 8-ends up was 2% greater than the 6-ends up. The second zone was 4.7% greater, while the final zone was 24% greater. It was believed that the increased draft at the point of smallest bulk contributed to the more parallel positioning of the fibers at the draw frame, and it was reported that sliver uniformity was not reduced by the increase in draft.

CORRECT WEIGHTS. Correct weight per yard in drawing sliver is one of the most important points in the management of a mill. Variations in drawing-sliver weights carry through to yarn and cloth weights. Since changes in draft gears on roving and spinning frames are often uncertain and unsatisfactory, gear changes to correct weights are almost universally done at the drawing frame. However, many of the mills reported in this resume of experience did not correct sliver weights to moisture regain before deciding whether gear changes were necessary. The result of such neglect is constant changing of gears back and forth. First, they are too heavy, then too light. It is just as necessary to correct the weights to moisture regain as it is to correct picker lap-weights to regain. Correction may be made by the use of a modified lap-weight indicator that gives the corrected weight for any indicated regain. It may also be computed from wet- and dry-bulb readings and a regain table.

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In every avenue of endeavor there is one name that, without question, stands in the very front rank for quality. Alert hosiery mill heads will tell you that in their line—it's

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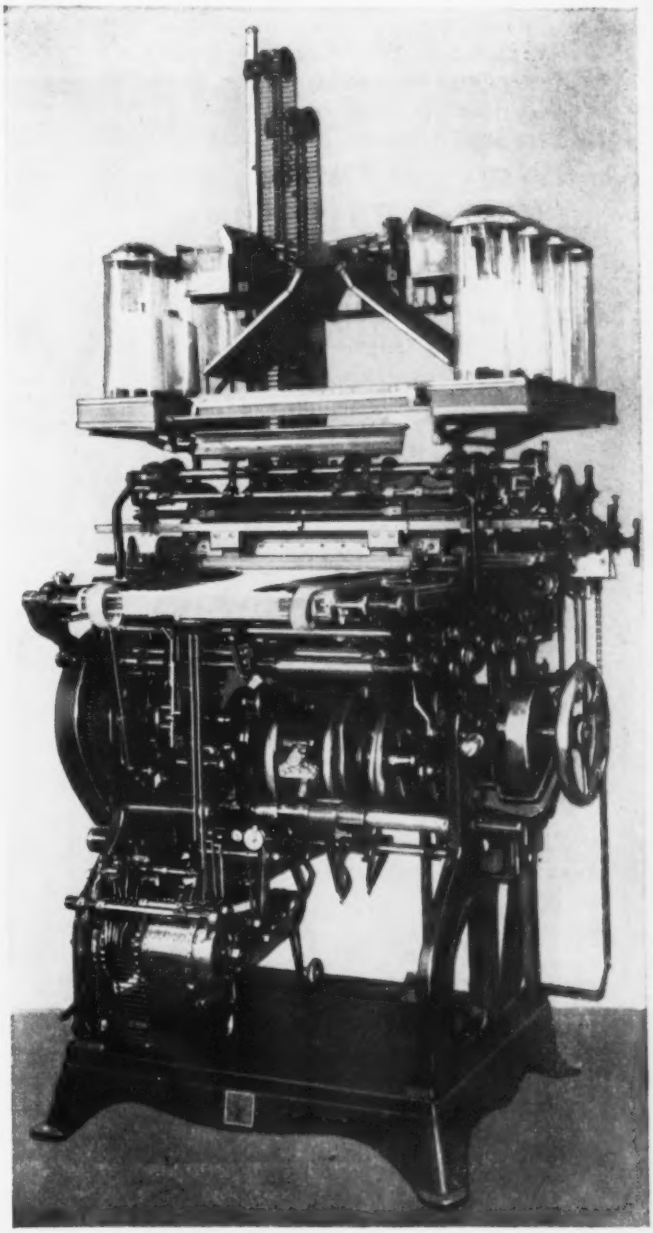
A machine that is shipped COMPLETE — starts knitting stockings a few hours after it arrives at your mill.

A single-head machine that KNITS THE ENTIRE STOCKING in ONE OPERATION.

A machine that makes the finest gauges of hosiery every day, *anywhere* because it is not affected by temperature changes.

A machine that should be your next buy for more and better stockings.



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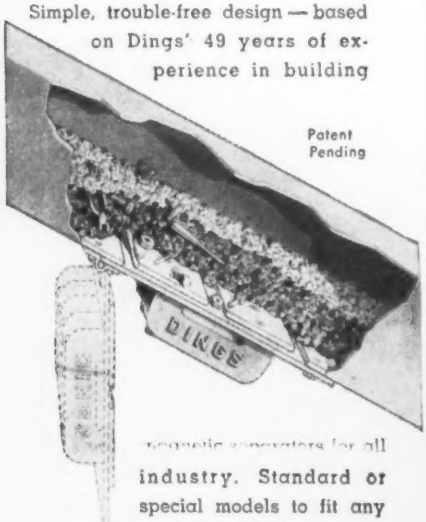
It's the lightest . . . most powerful . . . least expensive Alnico magnet available. Highest grade Alnico . . . magnetic permanence guaranteed for mechanical life of installation! Simple to install in chutes, ducts, pipes and above belts. Non-electric . . . no operating or maintenance expense . . . easy to clean. Removes tramp iron from all dry products — protects machinery . . . prevents fires and explosions caused by tramp iron sparks . . . keeps products iron-free. Simple, trouble-free design — based on Dings' 49 years of experience in building



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Only manufacturer of a complete line of Permanent and Electro Magnets for every purpose.

"Since 1899"

Dings

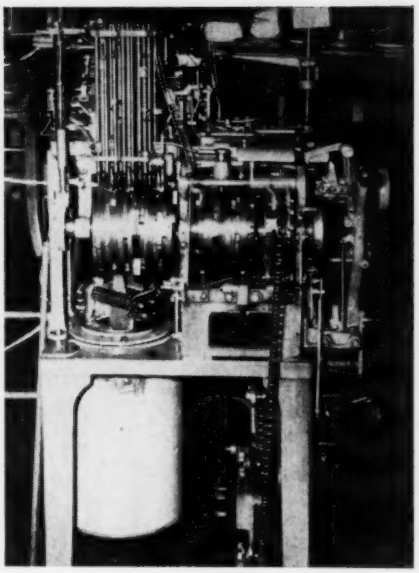
"HIGH INTENSITY"

Waldensian Hosiery

(*Continued from page 133*)

patterns of extremely fancy design, lay-in tops, and Banner elastic tops. The machines have 160 needles and 3½-in. cylinders. Waldensian models (ESJ) have many improvements over the older models. Improved spindles, better oiling facilities, and improved stop motions are among them.

There are 76 Scott & Williams HH-PW machines, many of which are new. From them, Waldensian obtains full-ribbed tops or anklets, and other advantages such as 3-color clocking and color in color. Among the improvements on the new models are: new stitch cams, improved pattern-jack arrangement, chain striper, and modified pattern-jack drums.

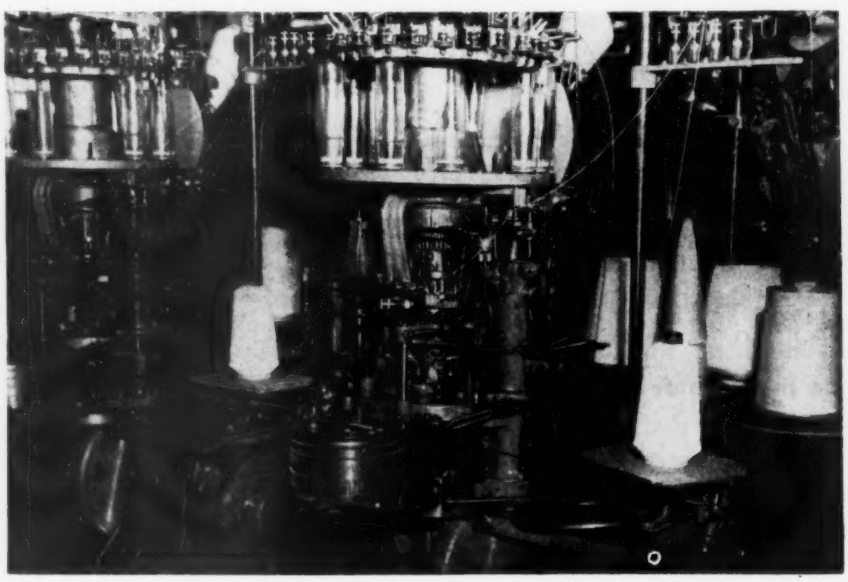


***Closeup** shows details of new links-and-links Komet machine. An extra stop motion for elastic yarn was designed and put on by the mill.*

400-NEEDLE EFFICIENCY. Waldensian's 400-needle machines, the Scott & Williams Dancing-Twins model, are voted among the most successfully operated 400-needle machines in the industry. The mills solved their streaking problems and are considerably ahead of the average seamless mill in systematic maintenance and operation of the 400-needle machine. Much of the credit is said to be due to Waldensian's ability not only to follow the most up-to-date advances by the machine's builders but also to install and follow up a system of preventive maintenance. For example, a girl operator handles all of Waldensian's 50 Dancing-Twin machines; and one fixer takes care of all the maintenance on the 50 machines. Twenty five of the machines are on a new style, the almost-ready-for-market "Micromesh" of 15-den. nylon; and 25 machines are producing regular seamless hose of 15- and 20-den. nylon.

Crank handles are provided on each machine for the convenience of the girl operator. Production every 8 hr. is 16 per machine. Efficiency of the machine is 77% and up.

Much of the mill's success with the 400-needle machine comes from the ready installation of every new or improved part or supply that can be obtained. Their machines have new boxed-in sinker cams, new stitch cams, (flat rather than sharp as formerly), and new sinker bands that are not tight as former ones were. Conditioning agents have played no part in the mill's conquest of streaks. No



***New stitch cams,** chain striper, and improved pattern-jack arrangement are used on this S&W HH-PW machine.*

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Overcome the handicap of obsolete handling methods—let Towmotor Mass Handling help you increase productive output in your plant. Versatile, gasoline-powered Towmotor Fork Lift Trucks and Towmotor Accessories provide all the benefits of modern handling techniques for every plant, large or small . . . handling raw materials and finished products of every size, shape and type . . . 24 hours a day. Turn to Towmotor for the solution to your handling problem. Follow the lead of the men who have to make handling pay a profit. More *professional handlers* use Towmotor than any other fork lift truck.

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Towmotor Fork Lift Truck, Model LT-50, equipped with Towmotor Revolving Carriage Accessory for transfer movement of bulk materials.

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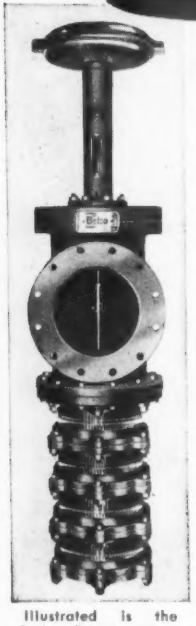

Illustrated is the Belco Deaerating Heater Steam Dome and pressure compensating spray valve.

BELCO DEAERATING HEATER

This new Belco Deaerating Heater accomplishes both heating and complete deaerating in a few seconds time. The spray valve fills the stainless steel dome with a cloud of droplets which are contact heated and degasified by the inrushing steam. Intermingling of steam and water also drives out a portion of the CO_2 held in the bicarbonates.

Contact with heated baffle plates and impingment of counterflow steam insures complete removal of all gases. Degasified water is ejected into the deaerated storage compartment by the incoming steam—triple assurance that all traces of gas are removed before the water leaves the heater.

MODERNIZATION RESULTS IN LARGE OPERATING SAVINGS

Belco engineers are specialists in conversion and modernization of existing plants. The knowledge gained in designing the world's largest automatic demineralization and silica removal plant can be used to reduce your operating costs.

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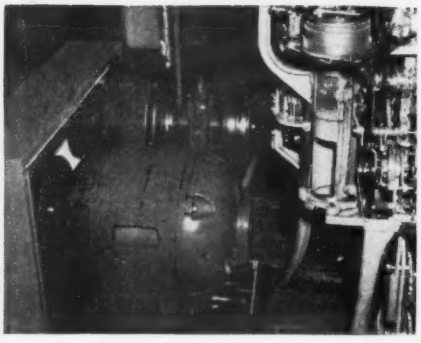
Belco

PROCESSES FOR REMOVAL OF WATER IMPURITIES



Speed reducer applied to the line shaft gives slow shaft-speed, does away with extra large pulleys, saves valuable space.

oils are applied except the regular cleaning and lubricating oils.

Machines which give trouble at the Pauline Mill are simply stopped and never started again until the trouble has been remedied. The mill followed this policy at the beginning of 400-needle operation and has not deviated from it. The mill has a firm policy of machine inspection at regular intervals to prevent unnecessary stoppage of machinery. Their record of 77% efficiency on the 400-needle machine is but one of the production rewards that resulted from sufficient and systematic maintenance.

NEW LINKS AND LINKS. Waldensian equipment is further diversified by 132 links-and-links Komet machines, all of them new replacements for older model machines. The machines have 168 needles and 4-in. cylinders. Three-color, ingrain work is now produced upon them, including many new patterns. While the new machines are equipped with the Wesco stop motions, they have been modified somewhat by stop motions of Waldensian's own design. To Waldensian fixers and supervision goes the credit for supplementary stop motions on needles and rubber yarns that give the new Komets further precision.

There are many Hemphill 8-step, 3-color Banners in the Pauline mill. These machines have 240 needles and 3½-in. cylinders. There are also many Hemphill 19-step machines that are equipped with the new 40-color spindle. These machines also have 240 needles and 3½-in. cylinders for the extra fine-knit Waldensian seamless hose. These Hemphill machines round out Waldensian line of machines and supplement the fancy Hemphill machines, the wrap-reverse; in addition there are several of the Scott & Williams model K and model ES machines.

ENGINEERING IS ADEQUATE. New installations of American Moistening Co. humidity and air-change system give Waldensian a temperature of 80 to 85° F., and a relative humidity of 59 to 61%. Other modern engineering features are American Pulley Co. speed-reducers on G. E. motor drives to shafts, and the so-called "dry system" sprinklerage by Automatic Sprinkler Corp. of America.

Boiler Feedwater

(*Continued from page 137*)

4. Dissolved oxygen 0.005 ml./1. or below

5. pH at least 9.7

6. Silica as low as possible. For 600 psi. and less, the boiler water SiO_2 = 40 to 50 ppm. For 1,200 psi., the boiler water SiO_2 = 10 to 20 ppm.

The American Boiler Manufacturers' Association & Affiliated Industries has issued specifications for the maximum permissible concentration of total solids in the salines in boilers equipped with steam purifiers. These are given in the accompanying Table I. Supplementing these numerical data are the requirements that:

1. Total solids (soluble and suspended) should not exceed the total dissolved solids by more than 5%.

2. Total alkalinity of the concentrated boiler water should not exceed 20% of the total dissolved solids.

The American Society of Mechanical Engineers has issued a specification governing the minimum ratio of sodium sulphate to alkalinity in boiler salines in an effort to inhibit so-called "caustic embrittlement." This recommendation is summarized in Table II. Materials, such as nitrates or quebracho tannin, whose addition to the boiler water inhibits caustic embrittlement, have been used with success.

CORROSION PREVENTION. Corrosion of steel or iron surfaces in contact with water is caused by the presence in water of:

1. Carbon dioxide resulting in a low pH

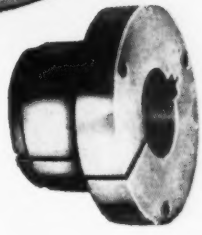
2. Oxygen (up to saturation)

Corrosion of steel pipe, fittings, valves, and tank surfaces causes millions of dollars of loss per year. In addition, in a textile mill such corrosion imparts iron to the flowing water in contact with the surface and may cause serious difficulties in textile-finishing processes by the formation of iron stains on the cloth.

Corrosion of steel or iron can be prevented by properly conditioning the water supply. Usually one or a combination of the following three methods can be used, depending upon the type of corrosion, water composition

Announcing . . .

THE NEW *Wood's* PULLEYS *with* INTERCHANGEABLE "*SURE-GRIP*" HUBS



One-piece flanged and split tapered hub permits easy installation and removal from shaft.

Now, you can carry a stock of both pulleys and sheaves with the same interchangeable "Sure-Grip" hub as used with our "Sure-Grip" Sheaves.

1. *No additional stock* of hubs needed.
2. *No increase in price* over standard pulleys.
3. *Just three hubs* take care of bore range from 1 ½" to 2 ⅝".

"*Sure-Grip*" *Pulleys*—cast iron with crowned face—are available *in stock* as listed in table.

HUB TYPES

DIA.	BELT WIDTH (INCHES)				
	2½	3	4	5	6
4	SD	SD	SD		
5	SD	SD	SD		
6	SD	SD	SF	SF	SF
7	SD	SD	SF	SF	SF
8	SD	SD	SF	SF	SF
9	SF	SF	SF	SF	SF
10	SF	SF	SF	SF	SF
12	SF	SF	SF	SF	SF
14	SF	SF	SF	SF	SF
16	SF	SF	SF	SF	SF
18	SF	SF	SF	C	C
20	SF	SF	SF	C	C
24	SF	SF	SF	C	C

For further information, write

T.B. *Wood's* SONS CO., CHAMBERSBURG, PA.

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***for* COTTON AND SYNTHETIC FIBERS**

and requirements, and plant economics.

1. Increase the pH of the water by feeding alkali to the point where the Langelier Saturation Index (a measure of the potential of a water supply to precipitate out calcium carbonate) is just positive, say +1.0. This causes the formation of a very thin, hard, calcium-carbonate scale which prevents further corrosive action by the oxygen in the water on the metal. Where calcium is not present in the water supply in sufficient quantity, an increased pH (8 to 9.5) will reduce the tendency of the water to attack the metal even where no calcium-carbonate scale is formed and oxygen is present in the water. This is an inexpensive method of corrosion control.

2. Add phosphate, chromate, or organic compounds which inhibit the corrosive action on the metal.

3. Remove the oxygen in the water by vacuum deaeration or chemically by feeding sodium sulphite. This is usually the more expensive method and is used in some plants where over-all operating economy is obtained.

1948 Rayon Gain

(*Continued from page 105*)

seas production in the near future depends more on the rehabilitation of Germany, Italy, and Japan than on the new plants, built and to be built, in other countries.

Domination of the viscose process is evident in world figures, since it accounts for 74% of world filament production. Acetate process accounts for 22%, and non-cellulosic yarns for about 4%.

NON-CELLULOSICS ACTIVE. The many minor processes in this country are active though none gives signs of catching up yet with nylon and glass fiber. No plans beyond the pilot plant are reported for Carbide & Carbon's Vinyon N. There are, however, continuing developments there in product improvement and market research. There is said to be great possibility in the cut staple of this fiber because of its greater strength when compared with staple rayon, its chemical stability, its greater resilience, its possibly greater fineness due to stretch spinning, and its likely greater economy in production cost.

Another fiber of the acrylonitrile group, with properties being between rayon and nylon, called "Fiber A" by Du Pont, is likely to be put into production at the new plant under consideration by that company at Camden, S. C. This fiber will bear the name "Orlon" when eventually made available.

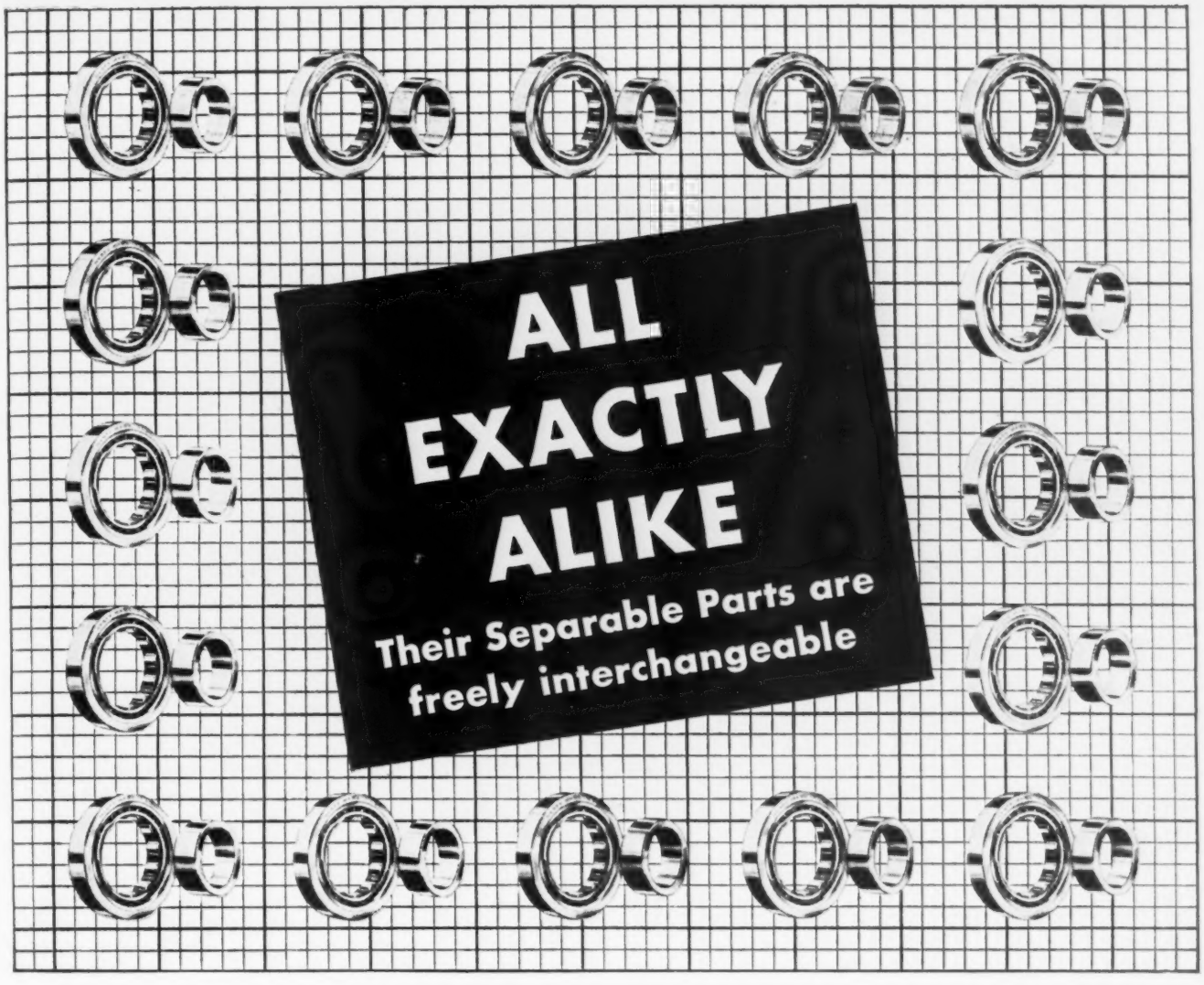
The Virginia-Carolina Chemical Co., now appears to be the only company left in the protein-fiber field and production in the plant formerly devoted to Aralac at Taftville, Conn., is being developed slowly. The generic name of "azlon" is not only of scant further use but it is understood to be rejected by the only maker left in the field.

Glass fiber has been moving into numerous new fields and such various items as tarpaulins, lace and net curtains, draperies, upholsteries, ironing-board covers, etc. are being successfully made from it, in addition to its basic industrial uses. The leading company has progressed with finishes and coatings which improve the feel, aid the drape, and give promise in dyeing and finishing.

Nylon is as important as ever, and new facilities were brought into partial operation last month in a new plant near Chattanooga, Tenn. Full production there will not be realized until about the end of the year. The resale market for nylon remains at its peak on all sizes except 15 den. The latter, which is quoted for allotment by Du Pont at $5.50, has changed hands for as high as $28.00 in the open market but has settled back to $12.00 to $15.00 recently. As stated, other numbers hold their peak values. The 30 den., alloted by Du Pont at $2.75, commands $13.00; and the 60 den., allotted at $2.55, brings $11.00. Intensity of the excess of demand over supply can be measured by the fact that these "gray" market nylon prices are three to four times the first-hand price. Rayon resale prices six months ago held nearly the same ratio, but they have sagged lately to about twice the first-hand levels.

Silk, though not a synthetic, has a price relationship to rayon and nylon. Lately, it has been in somewhat better demand, particularly for fabrics to be printed, and its price is considerably under the gray-market figures on nylon. Promotion of silk has, it is said, exerted pressure on rayon gray goods to the extent that prices have been reduced 5% or more in some instances, although the silk yardage is only about 5,000,000 yd. per year against rayon's 2,000,000,000 yd. total.

RECORD FABRIC OUTPUT. Production of rayon, nylon, glass, and silk fabrics in the first quarter of this year is reported to total 554,600,000 yd. This is a gain of 17% over the first quarter of last year and of 33% over the quarterly average for 1947. These fabrics are in largest part rayon, the



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Being *mass-precision-produced*, the separable component bearing parts are freely interchangeable. On your final assembly lines, subassemblies go together without time-wasting selection or "matching" of bearings.

And because Hyatt Hy-Loads are available in 10 major types—more than 500 sizes—in two diameter series, wide and narrow widths—your design engineers can select the Hy-Load bearing best suited to your needs. Write for information. Hyatt Bearings Division, General Motors Corporation, Harrison, New Jersey, Chicago, Detroit, Pittsburgh and Oakland, Calif.

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DRINKING WATER COOLERS

1. Instant, effortless finger-tip pressure. 2. No spouting, no splashing, no annoying fluctuations in water flow. 3. Bubbler design gives maximum sanitary protection. 4. Temprite patented cooler assures a constant, even water temperature. Never too cold, never too warm. 5. Streamlined stainless-steel top.

All models meet the requirements of the National Bureau of Standards, U. S. Dept. of Commerce. Approved by Underwriters' Laboratories, Inc.

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other fibers accounting for only about 3% of the total. The 1948 first-quarter figure is an all-time peak.

The greatest yardage is found in filament-rayon fabrics which in the first quarter of 1948 increased 17% over the first quarter of 1947. The next largest item is all-spun-rayon fabrics, which are up 96%. Combination spun-and-filament fabrics are unchanged; mixtures and blends, in which rayon is 51% or more, declined by 38%. Among the filament fabrics which show greatest increases are flat and canton crepes, failles, and taffetas; the largest increases in all-spun-rayon goods involve twills, serges, poplins, challis, and bedford cords. In combination fabrics, fujis declined while shantungs gained. Among the blends, those of rayon and wool show slight change, but those of rayon and cotton have fallen off radically.

In hosiery, rayon has virtually disappeared from women's full-fashioned and seamless goods, while nylon gained new highs in each. In men's half hose, rayon has continued its previous gains.

Producers are reported to have held stocks at the end of June as follows: viscose (plus cupra) filament, 6,700,000 lb., or 21% of the June shipments; acetate filament, 2,800,000 lb., or 12% of the June shipments; staple and tow, 4,200,000 lb., or 18% of June shipments. Figures are not available on stocks outside of first hands.

WEAVERS' EARNINGS *in Various Areas Compared in Survey*

***HIGHLIGHTS:** Bureau of Labor Statistics gives area averages for weavers and loomfixers as of April, 1948—Cotton, rayon, and wool branches of industry surveyed—Earnings generally up 30 to 35% from two years previous.*

AVERAGE HOURLY EARNINGS in weaving jobs in cotton mills ranged from $1.17 to $1.47 among three New England areas and from 99¢ to $1.25 among five Southern areas studied in April, 1948, according to the Bureau of Labor Statistics of the U. S. Department of Labor. Men weavers tending plain automatic looms averaged $1.30 an hour in Northern New England, $1.24 in the Fall River-New Bedford area of Massachusetts, $1.15 in Charlotte, N. C., and Northwest Georgia, and $1.08 in East Central Alabama. Women weavers employed on similar equipment generally averaged from 1 to 3¢ an hour less. Loomfixers, among the highest-paid plant workers, averaged $1.47 or more in the New England areas; average earnings of comparable workers in the South fell in the $1.19 to $1.32 range.

Straight-time average hourly earnings in weaving jobs in rayon and silk textile mills ranged from $1.11 to $1.35 in eight production areas during April, 1948. Men dobby-loom weavers averaged $1.33 an hour in Northern New England, $1.28 in Southern New England, $1.29 in the Allentown-Bethlehem area of Pennsylvania, $1.24 in the Greenville area of South Carolina, and $1.12 in Western Virginia. Women weavers tending similar equipment averaged slightly less in most of these areas. Loomfixers, the highest-paid men workers studied, averaged $1.50 or more in the New England areas and $1.45 or more in the Pennsylvania areas. The area averages in loomfixer jobs in four Southern areas amounted to $1.43 or more.

Straight-time average hourly earnings in weaving jobs in woolen and worsted mills ranged from 99¢ to $1.64 during April, 1948, in six areas studied by BLS. Men weavers on worsted fabrics averaged $1.64 in Rhode Island, $1.61 in Paterson, N. J., $1.59 in the Lawrence area of Massachusetts, $1.49 in Northern New England, $1.43 in Philadelphia, and $1.20 in the Virginia-North Carolina area. Women weavers on worsted fabrics averaged from 2 to 13¢ an hour less. Earnings in woolen-weaving jobs were found to be below the worsted-weaving wages in Rhode Island, Philadelphia, and the Virginia-North Carolina area; woolen weavers in the Lawrence and Northern New England areas, however, earned more than worsted weavers. Loomfixers averaged $1.60 or more an hour among the Northern areas, or approximately 30% more than workers in comparable jobs in Virginia-North Carolina area.

All of these earnings when compared with a similar survey about two years previous showed increases of 30 to 35%.

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Calcosol Brown BR Paste is a level dyeing anthraquinone vat dye with outstanding fastness properties. A dispersed powder form, Calcoloid Brown BR Double Powder*, is also available.

Either type is suitable for dyeing by the pigment or by the reduced method. Calcosol Brown BR Paste and Calcoloid Brown BR Double Powder are widely used for dyeing yarn in package form and for dyeing piece goods by the pad-jig and by the various continuous processes. It is applicable to textiles made of cotton, viscose rayon, wool, and to mixed fiber fabrics.

Brown shades on awnings and lawn furniture fabrics which must withstand continuous exposure to sun and weather should be produced with this dye. Tan shades and brown shades on sportswear, rainwear, work clothing and other textiles which are worn outdoors and which are also subjected to repeated laundering will give consumer satisfaction when dyed with Calcosol Brown BR Paste or the corresponding powder type.

UNIFORMS AGAIN!

With the draft going into effect again, the demand for dyes for uniform fabrics has increased. Since no one knows just how fast this program will gain momentum, it seems advisable to prepare formulae and arrange sources of supply now.

Undoubtedly, large quantities of chrome dyes will be required for wool and, of course, vat dyes for cotton fabrics. Some specifications have been changed, making a review of earlier information advisable.

Contact your Calco representative for assistance in meeting the requirements of the new program.

*TRADEMARK

About Baby Pinks and Blues that Last

For soft shades of Baby Pinks and Baby Blues on wool that are truly fast to washing and light, vat dyes are most satisfactory. Such Baby Pinks produced on wool stock or tops with Calcosol Pink FFD Paste; or Baby Blues dyed with Calcoloid Blue BLD Double Paste will withstand shrinkproofing with Lanaset. Thus, for the first time it is possible to produce Baby Blues and Baby Pinks that will retain their clear, pleasing tones throughout long use and many washings. In addition to this excellent color fastness, the added feature of shrinkage control is available.

For details on the best method of application of vat dyes on wool for this and other purposes consult your Calco representative.

New Additions to the Line of Calco Dyes

Calconyl Double Solutions, in an adequate range of reds and yellows for stabilized azoic printing, now join the extensive list of Calco textile dyes. Calconyl Double Solutions are highly recommended for cotton printing as they produce full shades with good fastness to light, washing, dry cleaning, hot pressing and perspiration, and they are recommended for printing on cotton dress goods, tablecloths, handkerchiefs, towels, and similar applications.

Of particular importance to dyers is the fact that Calconyl Double Solutions represent a very concentrated form of solution, which requires less storage space and less handling. Calconyl Double Solutions maintain a high degree of stability in storage, and under normal plant conditions will not precipitate or separate during a long storage period.

FOR THE TEXTILE BOOKSHELF

Studies On Nylon Dyeing: Effect of Dyeing Procedure (Calco Technical Bulletin No. 798)—Outlines the experimental methods of dyeing and microscopic examination applied in the study of nylon dyeing with acetate, acid, direct, metallized and chrome dyes. Examples of the effect of differences in the physical properties of nylon on dyeing behavior are discussed briefly.

Application and Properties of Vat Dyes (Calco Technical Bulletin No. 802)—Contains general information about vat dyeing procedure and practical methods of applying Calco Vat Dyes. These are supported by tables giving fastness properties, relative strengths of the various types of Calco Vat Dye; reduction and dyeing data. The reduction and dyeing behavior of individual vat dyes under various conditions is discussed.

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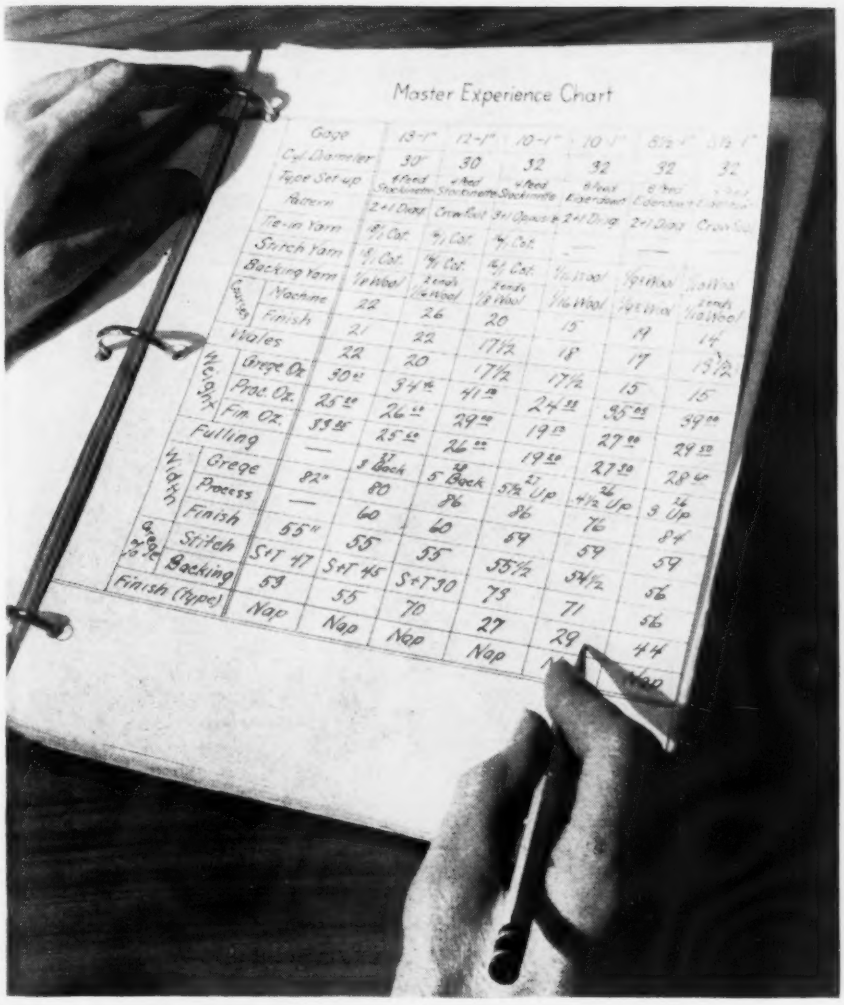

EXPERIENCE CHART

Reduces Costly Trials

HIGHLIGHTS: *Records of past constructions aid knitters in outerwear-fabric development or copying—Information readily available in mill for assembly—Charts aid blending of fabric characteristics.*

By ALBERT M. YOUNG, Jr.

MILL MEN CAN SAVE a lot of costly time in developing or copying knitted outerwear fabrics by keeping a record of construction details of past fabrics. Overseers can compile such a record from information already available in the mill, and it can reduce much trial-and-error experimentation.

There is so little reference material on knitting of fleeces, heavy jerseys, eiderdowns, etc., that trial-and-error fabric development is necessary. This method is valuable to the knitter, but it is costly to the organization. During experimentation, overhead continues at the same level—machines are idle—costs are upped by expensive, small-trial lots of yarn—spoilage is greater—and development costs rise in relation to the time it takes to bring output of the new fabric to peak efficiency. Therefore, it is important for managers to keep this time down to a minimum.

To overcome these problems, a master experience chart can be made up in the mill. Information gained through trial and error is thus re-

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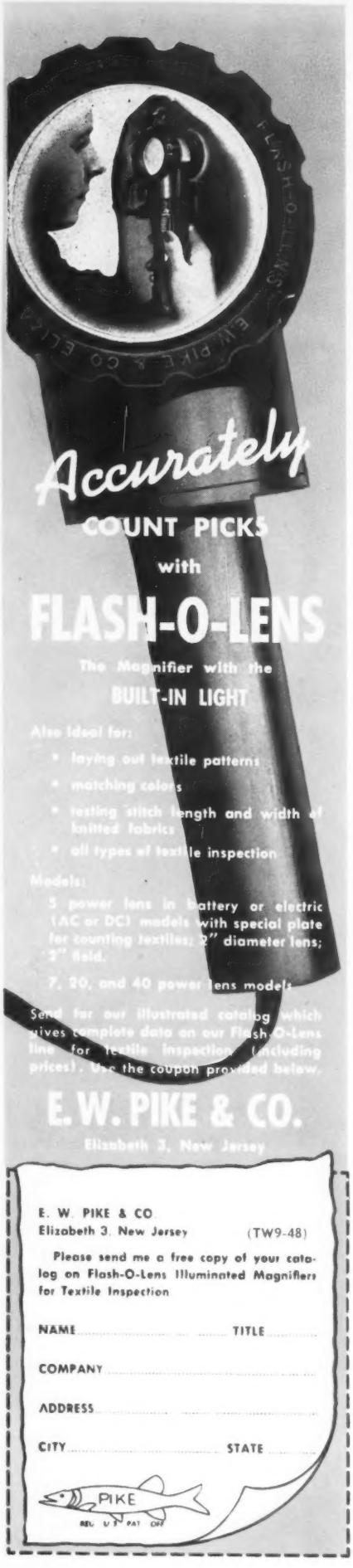
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corded. As data accumulates, the overseer will see that fabrics featured in previous seasons often bear a direct relationship to a new fabric. The desirable features of three or four fabrics may even be combined to produce the new one. In these cases, an experience chart can be valuable to managers in reducing experimental effort and cost; a definite handling routine can be used from the start. It will not, of course, be infallible. Actual processing may show that some deviations are necessary, but it should reduce the number of trials.

Mill men will also find the chart useful when duplicating fabrics. Most designers and technical men know that results of analysis do not always agree with known facts. For instance, the wales in a small sample figured with what should be the normal fabric width sometimes result in an indicated freak gage. Despite mathematical precision, abnormal shrinkage or some other factor impossible to discern in a small sample distorts the picture. Yarn-size indications are likewise not always reliable; yarns blended of short stock may suffer from excess fiber loss, particularly when subjected to many napper runs. These, and other analysis differences may be brought to light by comparing all construction factors of the new cloth with those of similar fabrics as shown on the master experience chart. Copying is accomplished by a combination of analysis and conjecture. The experience chart, showing results of known construction and processing, supplies the overseer with a medium between the two.

The chart also provides managers with a tool to aid in maintaining current fabrics within standard limits.

Compiling a master experience chart makes use of data usually already available. Many mills use a cloth piece ticket having a recording stub for each operation. After the piece has passed through all operations, the assembled stubs contain a complete history. Some mills use a piece ticket which remains with the piece until the cloth is shipped. With this system, the overseer may transfer the data from the ticket to a work sheet. Where details are not recorded on the cloth piece tickets, they are usually available in individual departments. If information is not recorded during routine processing, department managers can get it through spot studies.

To make the master experience chart as representative as possible, it is good practice to make work sheets on each individual fabric first. Overseers should enter on the work sheet all pertinent details for as many pieces as is practicable. The degree of accuracy increases in ratio to the number of pieces included. One or two experimental pieces will not provide conclusive data, but they will have some value for future reference. When the overseer decides that sufficient information has been obtained on the work sheets, the results are averaged. Averages are then entered on the master experience chart. The figures represent optimum results for the particular type fabric and may be used as standards for future guidance.

The work sheets are also valuable and should not be destroyed. The master chart presents a composite picture of the results of construction and processing of many pieces. Its figures are averages representing the normal cloth piece made under everyday conditions in the particular mill. The work sheets will give the overseer all diversions from standard found in individual pieces. Thus, the master chart gives the statistics on the normal piece—the work sheets show extremes possible under given circumstances.

Before managers try to set up a master experience chart, a lot of thought should be given to the information which will be required. It is easier to cover each phase thoroughly while the cloth is in process than to have to backtrack later, especially when the needed information is not normally recorded during routine processing.

A suggested addition to the accompanying chart might be a record of gray and finished yards. Of course, the form and information will be different for other fabrics. Basically, the chart must contain the information required by the individual or persons for whose use it is planned. It is more prudent to have too much than too little.

Useful Accessories

(*Continued from page 152*)

developed by General Controls Co., 801 Allen Ave., Glendale 1, Calif. The valve opens and closes a gas fuel line in response to a theromstat, limit control, or similar device. Sizes from $\frac{3}{8}$ in. i.p.s. to $1\frac{1}{4}$ in. i.p.s. are available.

Electric Drinking-Water Cooler

A water-cooled electric drinking-water cooler described by its makers as being built to withstand rust, corrosion, and mechanical damage in industrial locations has been announced by Ebco Mfg. Co., 39 S. LaSalle St., Chicago 3, Ill. Capacity of the unit is 10 gal. per hr. All operating parts are enclosed for protection against high ambient temperatures, corrosive fumes, and dirt or lint characteristic of textile mill operation.

New Resin for Ion-Exchange Processes

A new high-capacity synthetic-resin cation exchanger is now offered in bead form

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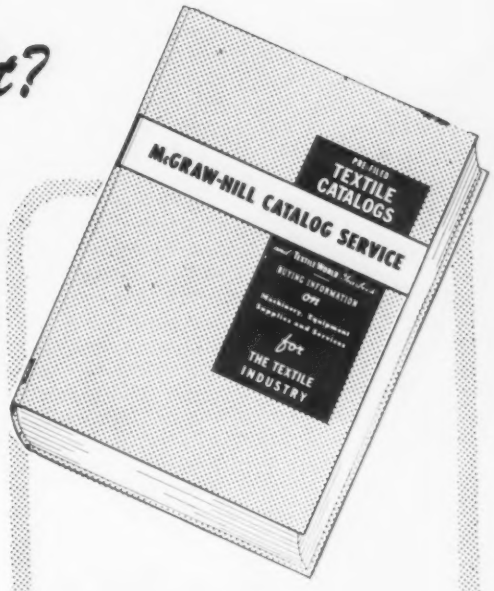

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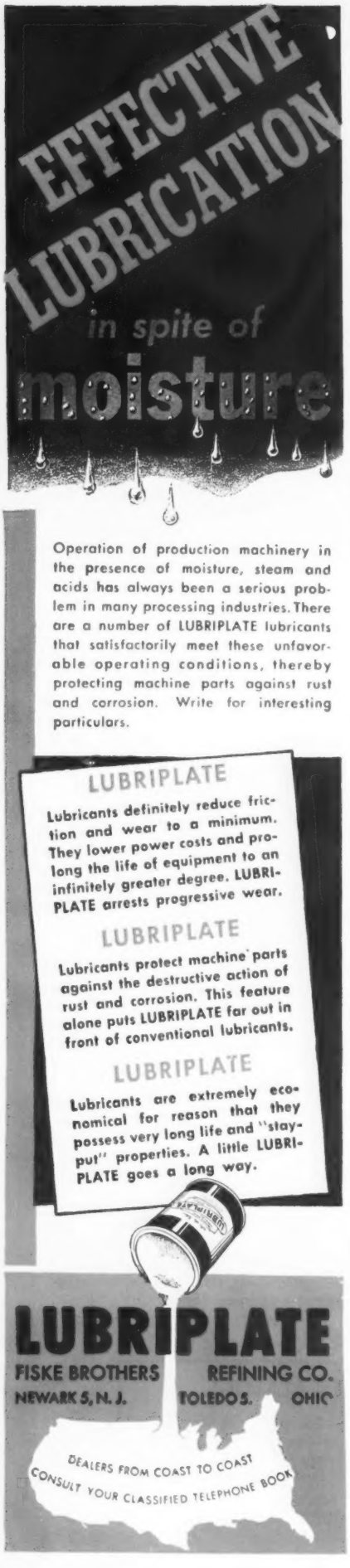
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by The Resinous Products & Chemical Co., Philadelphia 5, Pa. Smooth spherical shape; freedom from odor, taste; and color-throw; uniform size; and higher density are listed as advantages of the resin. Softening, dealkalization, and deionization of water are some of the product's applications.

Precision-Balanced Hand Truck

The "Floormaster" Steeler, a precision-balanced two-wheeled hand truck especially designed for boxes, cases, barrels, or other merchandise has been announced by Lewis-Shepard Products, Inc., 241 Walnut St., Watertown 72, Mass. The truck is all steel-welded and has swaged steel grips. It is available in two handle lengths, and wheels can be furnished in steel, rubber tires, or plastic.

Depth-Perception Instrument

A new method of measuring depth perception under conditions of normal sight has been developed by American Optical Co. The Verhoeff Stereopter is said to assure judgments entirely due to binocular stereopsis. The unit consists of a black, oblong bakelite case with a rectangular target window in the front face. It comes equipped with batteries and bulb, although operation with daylight is possible.

New Valve-Stem Material

A new valve-stem material said to minimize stem thread troubles has been announced by the Lunkenheimer Co., Cincinnati, Ohio. The alloy is also said to resist corrosion and dezincification.

Stainless-Steel Aneroid Manometer

A new device for measuring and controlling flow, liquid level, or specific gravity of caustics or difficult acids has been developed by Taylor Instrument Cos., Rochester 1, N. Y. No sealing fluids or purges are necessary in the ranges of 50, 100, and 200 in. of water differential with a body-pressure rating of 300 psi.

Flush-Type Clocks

A line of flush-type clocks designed to mount right into a wall has been announced by Harley's Clock Shop, Altman Bldg., Kansas City 6, Mo. Only the hands and characters project, and there is no reflecting glass to distort the dial of the self-starting clock.

Remote-Control Wiring System

A new remote-control wiring system which makes it possible to have any number of controls for lights or outlets has been developed by General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn. Switches are connected to the outlets they control by a lightweight, 22-gage wire carrying 25 volts. The switches activate 25-volt relays mounted at the lights or outlets themselves.

Aluminum Nails

Aluminum nails in six types and sixteen sizes are now being made by Reynolds Metal Co., Louisville, Ky. The new nails weigh only one-third as much as steel nails and are resistant to corrosion and stain. More nails per pound are also cited as a feature of low cost and transportation expense.

Glass Coating to Prevent Glare

A light-blue translucent material which shuts out glare has been announced by The Skybrite Co., Cleveland 14, Ohio. The glass coating is said to admit 94% of the light and to keep interiors cooler. The product can be brushed or sprayed on inside or outside. It is also available in white and light green.

Direct-Fired Unit Heater

A direct-fired unit heater, capable of delivering 550,000 B.t.u.'s per hour has been announced by the Thermobloc Div., Prat-Daniel Corp. E. Port Chester, Conn. Fuel, electrical, and exhaust gas connections are provided. The unit occupies 30-in. diameter floor space and is completely automatic. The maker claims that the unit used as a dryer can eliminate the usual mist around dye vats.

Air Hoist

A one-ton capacity air hoist weighing only 75 lb. has been announced by Keller Tool Co., Grand Haven, Mich. Power is furnished by a special air motor. Speeds from creep to 17 f.p.m. are provided in the hoist which has an 8-ft. standard length of lift.

Cushioned Containers in Roll Form

A new type of packaging medium—a cushion material in roll form—has been announced by Sherman Paper Products Corp., Newton Upper Falls 64, Mass. The "Tube-Tainer" is supplied in stock rolls 250 ft. long, in a variety of widths. The ends of the package are closed by any conventional taping, tying, or banding.

Lightweight Spot Welder

A lightweight spot welder, completely portable and self-operating, has been announced by Greyhound A.C. Arc Welder Corp., 606 Johnson Ave., Brooklyn 6, N. Y. Weighing only 23 lb., it welds up to ⅛-in. combined thickness of metal. The unit is available in 220- or 110-v. units.

Temperature-Limiting Regulator

A positive snap-action regulator for closing off steam supply has been developed by Manning, Maxwell, & Moore, Inc., Bridgeport, Conn. Featuring a manual reset, the regulator is made in ½-, ¾-, and 1-in. sizes for a range of 20 to 345° F. It is said to be accurate within ½°.

Pipe-Threading Machine

A portable power pipe-threading machine designed for use on all piping from ½ to 2 in. in size has been announced by American Die & Tool Co., Inc., 2nd and Buttonwood Sts., Reading, Pa. Any pipe within the above range can be cut, chamfered, reamed, and threaded without changing dies on the machine. This range can be extended to ⅛ in. to 12 in. by auxiliary equipment.

Cleaner and Deodorizer

A new chemical material possessing the dual ability to clean and deodorize has been announced by Oakite Products, Inc., 142 Thomas St., New York, N. Y. Soluble in hot or cold water, the solution may be applied on surfaces by sponging, wiping,

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or mopping. The material is said to be highly effective in destroying objectionable odors.

Non-Metallic Sheathed Cable

A non-metallic sheathed cable developed especially for use in weather extremes, fumes, corrosive vapors, and most fungi has been announced by the General Electric Co., Bridgeport 2, Conn. The new cable is also resistant to flames, moisture, oils, acids, alkalies, impact, and abrasion. It is available with two or three conductors in 14, 12, and 10 gage.

Centrifugal-Pump Speed Control

Centrifugal pump operation at speeds required by liquid-level control is offered in a new adjustable-speed vertical drive unit recently announced by Electric Machinery Mfg. Co., Minneapolis 13, Minn. The unit achieves control by driving the ring of the synchronous-motor magnetic drive at constant speed. The magnet member of the drive operates the pump at the required speed.

Tramp Iron in Chutes

Permanent magnetic separators designed to remove tramp iron from materials traveling down chutes or through ducts have been developed by Dings Magnetic Separator Co., 4740 West McGeough Ave., Milwaukee 14, Wis. The unit hinges into place after a section of the chute has been cut away. It is available in sizes from 4 to 72 in. wide.

Midget Hoist

A midget hoist designed to pull or lift 500 lb. with a 28-lb. effort has been introduced by the Coffing Hoist Co., Danville, Ill. The safety load handle of the 6½ lb. unit bends at about 800 lb., well below yielding point of any other part of the puller.

Electric-Drill Kit

A ¼-in. portable electric drill and ten high-speed drills are included in a 22-gage steel kit announced by Portable Electric Tools, Inc., 255 West 79th St., Chicago 20, Ill. The drill has a pistol-grip handle, operates on 110-volt a.c. or d.c. supply, and weighs 2 lb. 12 oz. The ten drills fit into a compact drill rack.

Gear-Gage Paper Weight

A novelty gear-gage paper weight has been introduced by the George Scheer Co., 200 Lafayette St., New York 2, N. Y. The device contains twelve leaves that include 24 different gear shapes. The gages are made in 14½° pressure angle but may be obtained in 20° and circular pitch.

Floor-Cleaning Machine

A low center of gravity and special reversing switch feature a new floor-cleaning machine announced by Corbin Screw Div. of the American Hardware Corp., New Britain, Conn. Available in single or twin-brush models, the machines are of the revolving-brush type, designed for wet and dry scrubbing, waxing, polishing, grinding, sanding, and troweling.

Counting and Weighing Scales

Counting and weighing scales mounted on wheels and 4-ft.-high legs have been developed by National Scale Co., 43 Mill St., Springfield, Mass. The scale is rolled over the boxes, barrels, drums, or other items to be weighed; and standard grabs are fastened on. Direct weight or count readings are taken from the indicating head.

Anchor Threader

A new anchor threader which eliminates hammering, has been announced by Acme Steel Co., 2840 Archer Ave., Chicago 8, Ill. Two strokes of the handle of the 7-lb. unit threads either a ¾- or 1¼-in. band about an anchor.

Thermal-Ampere-Demand Meter

A line of thermal-ampere-demand meters built into the standard watt-hour meters has been introduced by Westinghouse Electric Corp., 306 Fourth Ave., Pittsburgh 30, Pa. The new meters can be used on single-phase or polyphase systems where kva. demands are incorporated into the rate, but they are not intended for larger industrial metering.

Miniature Fluorescent Magnifier

Detailed inspection or comparison of fibers, weaves, and colors is said to be aided by a miniature fluorescent magnifier added to the line of Stocker & Yale, 48 Birch St., Marblehead, Mass. A 2-power lens is mounted in the reflector between twin 5-in. fluorescent lamps. Available with white or daylight bulbs, the unit is 6¼ in. long and weighs 10 oz.

Resistant Flooring Material

A stain, scar, and flame-resistant flooring material possessing good resilient qualities has been announced by the Chemical Products Div. of The Goodyear Tire & Rubber Co. The material, a calendered vinyl product which is highly thermoplastic, is available in several gages.

Flat-Stem, Dial-Type Thermometer

A new flat-stem, dial-type thermometer has been announced by W. C. Dillon & Co., Inc., 5410 West Harrison St., Chicago 44, Ill. The instrument is designed to clamp onto flat or rectangular surfaces and is held in place by C-clamps. It is available in the following capacities: 0-200° F., 50-500° F., 150-750° F., and 200-1000° F.

New-Formula Stencil Ink

A new-formula stencil ink, said to provide greater covering qualities, has been announced by Diagraph-Bradley Industries, Inc., 3755 Forest Park Blvd., St. Louis 8, Mo. The product, available in seven colors, is said to have greater durability against weather elements and to be impervious to gasoline or lubricating oils after drying.

Dew-Point Apparatus

A dew-point apparatus for measuring moisture content of air and gases at approximately atmospheric pressure has been announced by Pittsburgh Lectrodryer Corp., P. O. Box 1766, Pittsburgh 30, Pa. The apparatus uses an acetone

Announcing

3 New NON-IONIC RHOPLEXES

For Faster Finishing and Finishes That are Fast

COMPATIBLE— Use in same bath with acids, bases, salts, other resins, cationic and anionic softeners, and water repellents.

VERSATILE— Impart desirable handles with increased fullness and drape.

DURABLE— Produce durable finishes, and enhance the appearance of a wide variety of fabrics.

ECONOMICAL— Cut processing time. *One* bath gives permanent, clear finish. No curing necessary. Just apply and let dry.

RHOPLEX FRN	RHOPLEX WN-66	RHOPLEX WN-75
For a soft, full handle	Full, intermediate firmness	For a crisp, starch-like handle

Full information on these resin finishes is yours for the asking. Be sure to write today.

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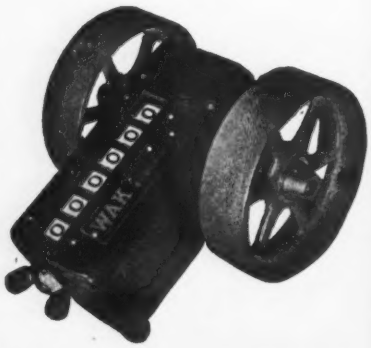
- ★ Tenter Counters
- ★ Twister Counters
- ★ Inspection Table Counters
- ★ Sewing Machine Counters
- ★ Yardage Counters
- ★ Folding Machine Counters
- ★ Hank Clocks
- ★ Special Counters



*T. M. REG. U. S. PAT. OFFICE

WAK INDUSTRIES CHARLOTTE, N. C.

and dry-ice mixture to cool the sample to the dew-point temperature. Dew points as low as −76°C. can be quickly checked.

New V-Belt

The Ray-Man V-belt, designed for rugged drives, has been developed by Manhattan Rubber Div., Raybestos-Manhattan, Inc., Passaic, N. J. Resistance to oil, heat, and static are said to be features of the belt.

Dry-Chemical Fire Extinguisher

A new 4-lb. dry-chemical fire extinguisher has been announced by Ansul Chemical Co., Marinette, Wis. Only 19½ in. long and 3½ in. in diameter, the extinguisher is suitable for use on flammable liquids, gases, solids, and electrical equipment. A special non-toxic, non-corrosive, non-abrasive, and non-conducting filler is used. The small size of the extinguisher makes it especially handy for use.

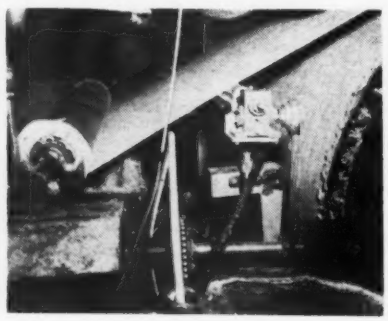
Separate Warp Lubrication Increases Weaving Efficiency

Increases in weaving efficiency up to 4.5% are claimed for a new warp-lubricating system developed by Southern Sizing Co. A special applicator is used to apply Slix, a warp lubricant, to warps between the size box and dry cans.

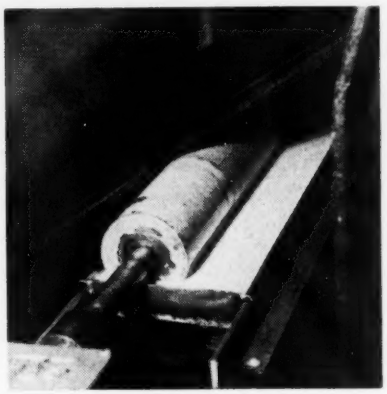
The development resulted from research which showed that lubricants applied in the size box tended to interfere with the starch-film adhesive qualities. Lubricants also formed into globules separate from the film itself. Microscopic examination of warps slashed with starch only and then lubricated with Slix applied separately are said to show a uniform and complete yarn coating.

Warp-lubricator units are installed between the size box and first drying cylinder. Installation of units is done by the Southern Sizing Co. From 0.7 to 1.5% of fat lubricant is added on the weight of the warp by the lubricator unit which controls the amount. Lubricant is pumped to a trough in which a roller which contacts the yarn is immersed.

Fabrics sized with Slix can be desized and processed in a manner similar to conventionally sized goods.



***Lubricant is pumped** from supply tank to trough for application after yarn has passed through size box.*



***Applicator roll** turns in same direction as warp movement but at slower speed.*

Surface-Active Agent Is Highly Concentrated

A new synthetic surface-active agent, said to be 224% stronger than conventional types, is being marketed to the industry under the name Sulframin AB Concentrate by the Ultra Chemical Works, Paterson, N. J. The agent is a very highly concentrated dodecyl toluene in small flake form.

Sulframin AB features high concentration, resistance to acids and alkalis, and excellent detergency, especially at higher temperatures.

The new detergent performs several important functions, among which are: cleanser, dyeing assistant, wetting agent, penetrant, etc.

Desizer Offered In Liquid Form

A new liquid diastatic enzyme concentrate for textile desizing has been announced by Rohm & Haas Co., Washington Sq. Philidelphia 5, Pa. According to the manufacturer, the new product, named Rhozyme LA, combines the recognized economy of a liquid enzyme with unusual stability at high temperatures, affording thorough and uniform desizing.

See the Show

Join with us, Our Friends and Competitors, at the Southern Textile Exposition in Greenville, South Carolina, Oct. 4-9. Just as you enter the Hall you will find our *Booth #127*.

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WATSON-WILLIAMS MFG. CO. . . . . *Shuttles*
WALTON LABORATORIES, INC. . . . . *Humidifiers*
MACHINECRAFT, INC. . . . . *Climax Ball Bearing Top Rolls*
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NYLON BEARINGS, INC. . . . . *Nylon Bolsters*
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Representatives also for other companies in restricted territories: Red Tip Mfg. Co.—Feeler Motions and Temple Rolls. National Plastics, Inc.—Plastic Tape Tension Idlers, Plastic Sheaves and Plastic Spindle Adapters . . . also for other Bobbin and Spool manufacturers.

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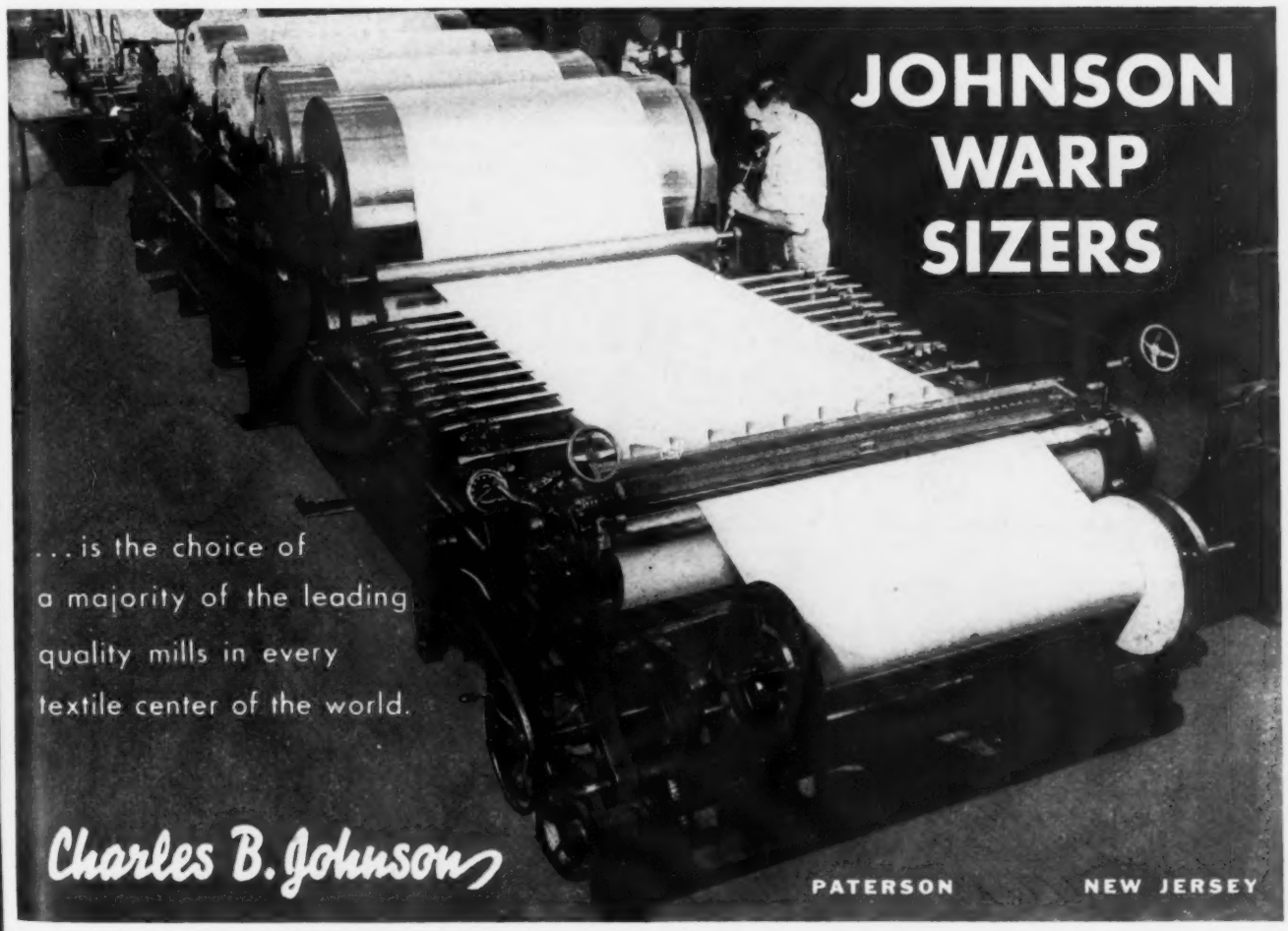

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Our Southern and Northern warehouse stocks permit same-day or overnight delivery 'most anywhere. Take advantage of these ready-to-ship sources of the finest travelers money can buy . . . And for service men who can talk with you and work with you on the spot, 'phone, wire or write Providence or Greenville, who will head a man your way promptly. A call to U. S. is a call that gets ACTION.

A Style and Size for Every Textile Fibre

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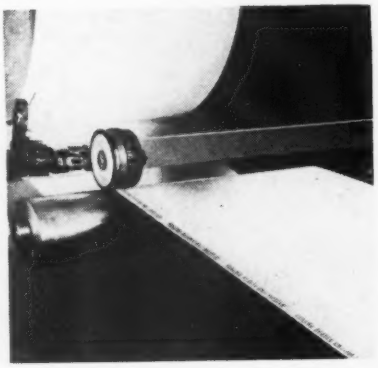
Providence—Box 1187—Gaspee 0100

Textile Equipment News

(Continued from page 152)

Machine Imprints Fabrics During Winding Operation



Printing on selvages of fabrics or webs is accomplished during winding or unwinding as they pass over an impression roller or rod.

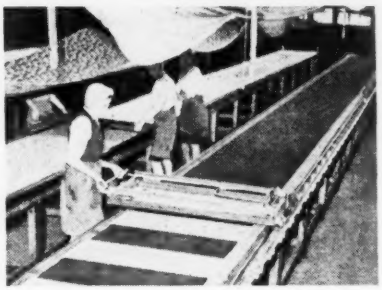
A new machine for marking trademarks, names, stripes, etc., on the selvage of textiles has been developed by Adolph Gottscho, Inc., 1 Hudson St., New York 13, N. Y. Known as Rolacoder 900, the new machine is similar to other models in that it can replace manual and other costly marking methods. However, this new model is designed specifically for imprinting continuous rolls or webs of textiles and other sheet material automatically as part of a winding or unwinding operation. The new machine features an entirely new ink-control system that permits the use of quick-drying and pigmented inks which are necessary for imprinting light colors on dark fabrics.

Rolacoder 900 is attached to a reel frame and imprints the web as it winds or unwinds. It is installed in such a way that its die wheel, which rotates on a spring-pivot arm, imprints the moving web as it passes over an impression roller or rod. Since this action is accomplished entirely by friction, no outside source of power is required to operate the unit.

The new machine is designed to imprint a clean, sharp permanent legend in a continuous or repeated pattern, and may be installed to imprint the web from above or below. Its diewheel has a cushioned base of patented interlocking-channel construction said to engage the type securely, yet to permit legends to be changed with unusual ease and speed. This feature also makes it possible to combine several different sizes and styles of type in any one legend. Special dies of trade-marks, etc., also are obtainable for use with the machine. The type surface is inked automatically, and the ink fountain is refilled only at infrequent intervals. Ink may be obtained in any color and for use on a variety of specific surfaces.

The Rolacoder 900 is made in several sizes to produce imprints ranging from ¼ to 8 in. in width. The machine is designed to be mounted by the user without altering the equipment to which it is attached. Constructed of precision-machined parts, sealed bearings, and tough-alloy castings, the machine is designed for long and trouble-free operation.

Mechanical Screen Printer Developed in England



Mechanical squeegee operation is the outstanding feature of this new screen printer.

A mechanical method of silk-screen printing has been developed by Industrial Color Applications, 33 S. Audley St., London W. 1, England. Orthodox screen and squeegee are used and can be mounted on any normal screen-printing table. The squeegee is mounted on the printing frame, and by means of a special spring device any predetermined pressure can be applied. Thus only unskilled labor is required for the actual printing operation.

The color is fed by hand onto the screen in the normal way, and since each pass of the squeegee is carried out at the same pressure, the amount of color used can be closely controlled. The squeegee prints with a reciprocating motion, and two or more passes of the squeegee can be made at each repeat if desired. Twin adjustable cams fitted at each end of the machine raise the whole squeegee mounting over the color supply and set it at precisely the same angle and pressure ready for the return run. Another cam causes the squeege automatically to reverse its angle to facilitate the pull or push movement.

The machine is designed to work with existing silk screens and with the usual types of squeegee. Both screen and squeegee can be removed for cleaning, etc., in a matter of seconds. The machine runs on a rail which in-

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Color Matching Skylights

Standardize your color matching, avoid rejects, speed operations and you will lower your production costs, with a Macbeth Color Matching Skylight, the recognized standard color matching light source throughout the world.

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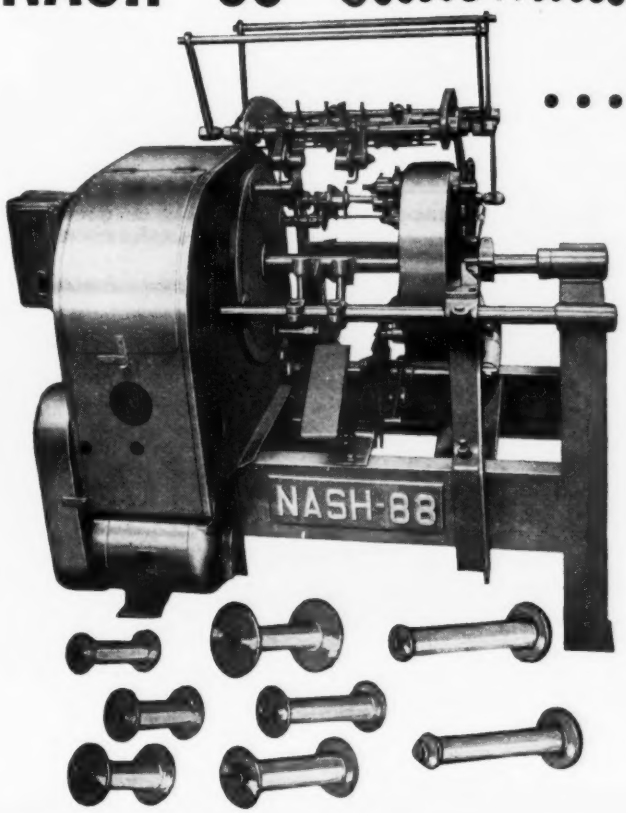
NASH "88" Automatic BOBBIN REFINISHER

...Now a Proven Veteran



Nash Bobbin Refinishers came like an answer to a prayer. There was urgent need for a machine that would keep bobbins in perfect condition and thus assure a better run-off of the rayon yarn. First came the larger No. 37 Bobbin Sander. Its acceptance and success created a demand for the No. 88, designed for mills requiring less capacity. Now, after many months of time-tested performance in the field, the No. 88 has won highest praise from users.

- It handles most types of flanged bobbins.
- Separate burnishing flanges produce a highly-polished surface of uniform quality.
- Abrasive action takes place on barrel portion inside flanges and top radius of flanges.
- It's high speed (10 bobbins per minute) saves labor . . . minimum set-up time is required.
- Quality that means low maintenance cost.

Write for complete descriptive literature

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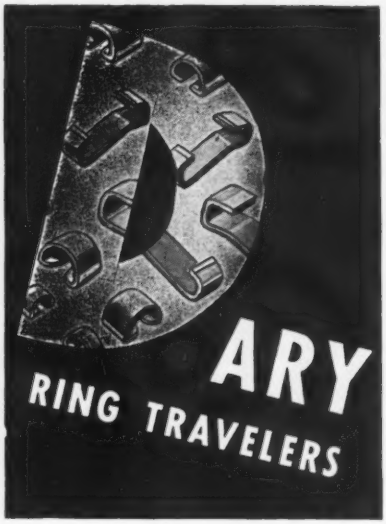


Welcome Travelers

Spinning room foremen all over the nation put out the welcome mat to Dary Ring Travelers. There's a reason why these travelers are always greeted so cordially. Dary Ring Travelers have established a reputation for being top quality products.

Each Dary Ring Traveler is carefully controlled to make sure it conforms to guaranteed weight, temper, and stock. Specially drawn stock is processed by specially designed tools and the most up-to-date manufacturing methods to give you the Dary Ring Traveler that is famous for quality.

Get in touch with your friendly Dary representative. He'll be glad to explain more fully why Dary Ring Travelers may be especially welcome in your spinning room.

PROCESSED
SYMBOL OF SUPERIORITY

The DARY RING TRAVELER CO.
TAUNTON, MASSACHUSETTS

JOHN E. HUMPHRIES, BOX 843, GREENVILLE, S. C.
JOHN H. O'NEIL, BOX 720, ATLANTA, GA.
H. REID LOCKMAN, BOX 513, SPARTANBURG, S. C.

corporates certain blocks and stops said to give an accuracy of registration to within 0.001 in.

The screens are lifted out of register with a "rolling" motion, thus eliminating smearing of the work or damage to screens, fabric, etc. By means of a simple lever device, the machine is moved from one printing position to the next, eliminating hand lifting of the frame to each registration point.

The machine is claimed to have printed all kinds of textiles, from the finest silks to the coarsest hessian, with complete success. So accurate is the registration, according to the manufacturer, that some firms dealing with very large patterns, are cutting the patterns in two, or even three parts, and printing them separately. It is said to be impossible to see where the joints fall in the finished work.

In addition to the saving in labor, the makers state that the machine is 50% faster than former hand methods.

The unit is made with a standard 36x20-in. printing area, but other sizes can be obtained.

Gas-Powered Prime Mover Has Many Uses

A bucket or platform can be used interchangeably on this new prime mover.

Combining the functions and features of a wheelbarrow, a platform carrier, and a light scraper and grader, a motorized, three-wheeled prime mover is now being produced by Bell Aircraft Corp., Buffalo, N. Y.

The prime mover can be equipped with a bucket which dumps mechanically, a platform deck with an area of 9 sq. ft. It has a 50-in. blade attachment which doubles as a snowplow or as a scraper and grader. A power takeoff unit is also incorporated.

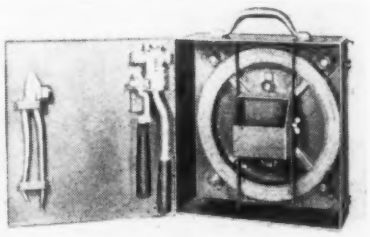
The prime-mover bucket has a capacity of 10 cu. ft. The addition of sideboards increases capacity to 18 cu. ft. for lighter materials. The bucket is said to be interchangeable with the platform in a few seconds and without tools.

The prime mover is powered with a 3-hp., air-cooled engine which operates for 8 hr. on 3 gal. of fuel. Transmission, clutch, and gears are completely sealed from dust, dirt, and moisture. No belts or chains are used to transmit power from the engine. All parts of the power unit are quickly accessible.

Weighing slightly more than 400 lb., the prime mover is 35 in. high, 63 in. long, and 31½ in. wide. It turns in its own radius, passes through ordinary doorways, and operates easily in close quarters and narrow aisles, allowing more efficient use of working areas.

An operator can learn to operate the prime mover in a few minutes. The mover's speed is a fast walking pace. A fingertip throttle assures highly responsive speed control. A brake on the rear caster wheel provides stopping and holding action, and the operator can always see his load and where he is going. Because of its low center of gravity, the manufacturer claims that the Bell prime mover will not upset, loaded or unloaded.

Lightweight Kit Carries Strapping Tool

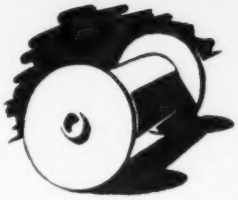


***A complete, lightweight** Steelbinder steel-strapping kit called the Strapkit has been announced by A. J. Gerrard & Co., 221 N. La Salle St., Chicago, Ill. Carried like a small brief case, the kit contains a Steelbinder strapping tool, and a cutter, and can carry enough coiled strapping and seals to handle several jobs without a refill. Strapkit provides a practical and economical means of carrying strapping equipment to out-of-way points of use and eliminates wasteful "estimates" of the amount of strapping needed for such work by dispensing at the point of use exactly the length of strap required. The strapping is unreeled through a small slit in one end of the steel case. Size of the kit is 14x12x5 in.*

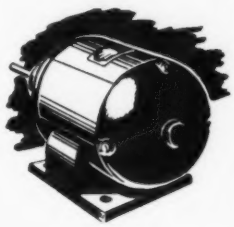
Process Timer Follows Schedule Automatically

A new time-schedule controller, type TAG, has recently been developed by C. J. Tagliabue Corp. (N. J.), 614 Frelinghuysen Ave., Newark 5, N. J. The timer can be synchronized with any system of air-operated semi-automatic temperature

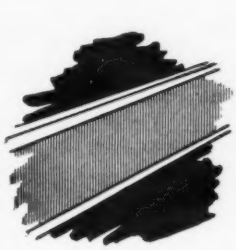
Money-Saving Maintenance Cleaning for the Textile Industry



CLEANING PLASTIC SPOOLS . . . Remove tough-to-budge deposits from plastic spools without etching or distortion. Use specialized Oakite kind-to-surface cleaning materials. Your local Oakite Technical Service Representative will be glad to suggest a formula for low-cost efficient cleaning.



REBUILDING ELECTRICAL MOTORS . . . Use recommended Oakite materials for cleaning before rebuilding or repairing electrical motors. Powerful Oakite detergents soften up insulating tape for easy removal without scraping. Performance-proved Oakite cleaning set-up gladly installed.



REMOVING RUST FROM REEDS . . . Use Oakite Compound No. 36 to prolong the life of steel reeds . . . to reduce reed replacement costs. This mildly acidic material quickly removes light rust deposits . . . leaves a fine protective phosphate coating that discourages further rusting. Send for directions.

FREE! DIGEST OF CLEANING TIPS

These three money-saving tips are selected at random from the 16-page Oakite Digest of Maintenance Cleaning For Textile Mills. Digest contains 63 equally worthwhile suggestions. Send for this valuable cleaning guide today. Your free copy will be mailed postpaid immediately upon request.

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Specialized Industrial Cleaning
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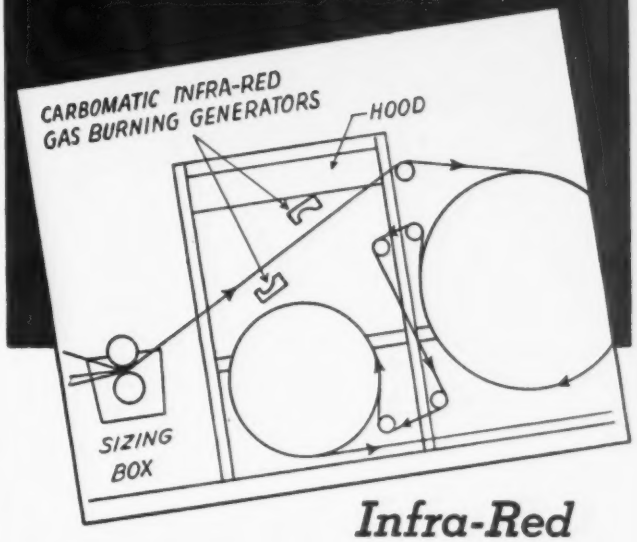
AUXILIARY
Slasher Dryer



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Increases Production 25-30%

- improves splitting action
- reduces yarn-flattening
- produces a better warp
- units available to completely eliminate steam cylinders

CARBOMATIC Infra-Red Radiant Heat Generators (gas-fired or electric)—installed on tenters, palmers, singers, slashers, curing ovens, printing machines, etc.—introduce amazing economies, speed up production, and help turn out finished products of higher, more uniform quality. Hundreds of actual performance records of Carbomatic equipment . . . *the pioneer in Textile infra-red applications* . . . prove this statement. Every Carbomatic installation is covered by the binding guarantee of *complete satisfaction or no pay.*

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REVOLUTIONARY
SKEIN TWISTER
and
SEMI-AUTOMATIC
BUNDLING MACHINE

Illustrated is the Kiwi Skein Twister

These two machines—the Kiwi Skein Twister and Semi-Automatic Bundling Machine — will increase yarn handling poundage 5 to 10 times and save 20 to 30 per cent in labor in an average eight-hour shift.

This equipment and yarn handling process is adaptable to every requirement and every type of yarn. Big money and labor saving advantages are possible. Fill in coupon below for full information.

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Gentlemen—Please send me full information on your:

____ Kiwi Skein Twister
____ Kiwi Bundling Machine

Name .....
Address .....
City & State .....

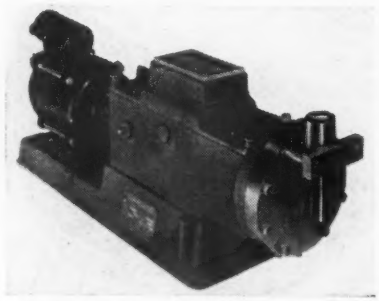
and pressure control now in use to make the process fully automatic.

Such an installation will enable manufacturers engaged in processes involving the control of temperature and pressure according to pre-set time schedules to obtain fully automatic time schedule control at relatively low cost and without disposing of presently installed equipment.

In use, the operator begins the process by pressing the starter push button on the timer. A signal light above the button flashes on to indicate the process is under way. By means of an adjustable cam, timing begins immediately, or, if desired, when the temperature has reached the processing point. This temperature is maintained for the predetermined length of time. All valves—steam, air, drain, overflow, and cooling water—are operated as the process may require and all manual adjustments heretofore performed by the operator are eliminated. At the completion of the process and the cooling period, the signal light is extinguished, indicating visibly that the process cycle has been completed.

The entire mechanism of the instrument is housed in an attractive, rugged case.

Proportioning Pumps Provide Measured Flow



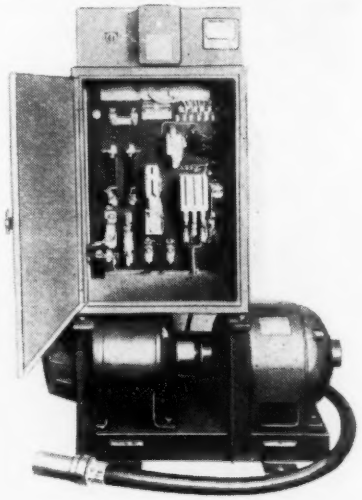
Controlled-volume pumping of fluids is carried out by this proportioning pump.

A new line of Pulsafeeder proportioning pumps, designated as CP models, has been announced by Lapp Insulator Co., Inc., Le Roy, N. Y. The new series is designed to provide greater capacities, higher-pressure operation, and rugged assembly for accurate feeding. The pumps are suited to a wide range of applications in laboratory, pilot plant, and dyeing and finishing processes.

The Lapp Pulsafeeder pump is a combination piston-diaphragm unit. A piston reciprocating over a measured stroke displaces oil, which in turn pulsates a diaphragm. The hydraulically-measured pulsation of the diaphragm actuates the flow of the chemical being handled. Thus the pump provides the accuracy of positive piston displacement and measured feed, at the same time incorporating the diaphragm-pump advantages of elimination of stuffing box, and complete isolation of chemical from pump parts. All pumps are micro-adjustable over the entire capacity range while the pump is in operation.

Four sizes of the CP model Pulsafeeder pumps are available: No. 1 for flow from zero to 11 gal. per hr., No. 2 up to 40 gph., No. 3 up to 100 gph., and No. 4 up to 330 gph. Duplex, triplex, and other multiple-head arrangements are offered for continuous blending or feeding. Various valve designs, diaphragm materials and materials of construction are offered to meet the chemical requirements of specific applications.

Industrial Truck Batteries Charged Automatically



Battery charging according to the manufacturer's directions is carried out by this packaged unit.

Improved heavy-duty battery-charging equipment for industrial-truck service, meeting all the standards of the Electric Industrial Truck Association, has been announced by the Motor Div. of the General Electric Co., Schenectady, N. Y. The equipment is packaged into one unit consisting of a single-circuit battery-charging motor-generator set, with its control cabinet mounted on a welded structural-steel framework directly above. It is completely wired and assembled before shipment from the factory.

The equipment meets the requirements of an 18-cell, 550-ampere hour, lead-acid-type storage battery. It is said to charge the battery at the exact

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Lurex is available to qualified mills by itself and in a wide variety of core yarns and twists. It can be woven or knitted with all natural and synthetic fibres.

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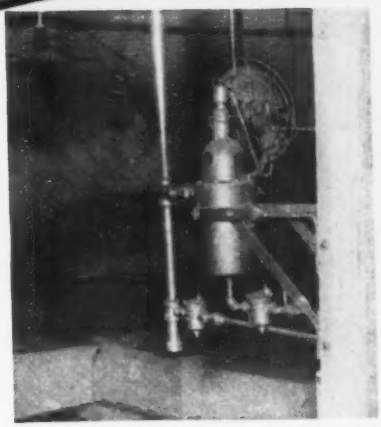
Efficiency Loss



DRY AIR is a costly headache in most plants during the heating season. Hygroscopic materials lose valuable weight; yarns, paper, containers become brittle and hard to handle; production is slowed; employees suffer loss of efficiency, are more susceptible to colds; static electricity sparks set off fires and explosions.

These losses are no longer necessary. Any plant can afford to install Armstrong Steam Humidifiers. A unit capable of humidifying 40,000 cu. ft. lists for only $120 complete with humidistat. They're as easy to install as unit heaters—hook into existing steam and electric systems. Dry steam is dispersed directly into the atmosphere to *automatically* maintain any desired relative humidity within close limits. Operating costs are about a penny per day per 1000 cu. ft.

NEW BULLETIN NO. 177 contains data on humidification; explains operation, selection, installation of humidifiers; includes prices, capacities. Send for a copy. ARMSTRONG MACHINE WORKS, 872 Maple St., Three Rivers, Mich.

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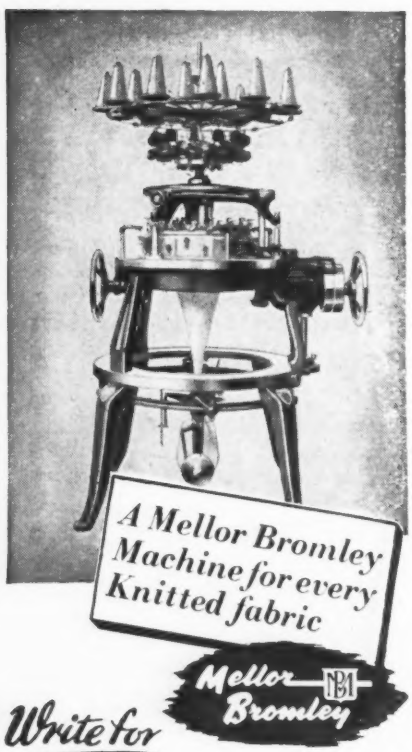

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tapered charge rate that is indicated by the battery manufacturer as being necessary for longest life.

The generator is a conventional 47-v. d.c. machine. For exact adjustment of voltage, a slide-wire-type resistor is used in the field circuit in place of the usual rheostat. This prevents tampering with the voltage after it has been set. The equipment is completely automatic. Connection of the battery to the terminals automatically starts the motor-generator set, and when it has attained synchronous speed the line contactor to the battery circuit is closed automatically. As soon as the battery has reached a voltage representing 75 to 80% of full charge, a timing device is actuated which cuts off the battery from the charging circuit on completion of the charge. This shuts down the motor-generator set and prevents overcharging the battery.

Care Prolongs Life Of Conveyor Belts

Most rubber conveyor belts fail at the point where the load to be conveyed is placed upon the belt, according to information released by The B. F. Goodrich Co. The two factors that most influence belt treatment at the loading point are the weight and shape of the load and the angle and speed at which it is dropped onto the belt.

The best loading arrangement is to load from a chute that permits the load to be traveling in the same direction and at the same speed as the conveyor belt. The distance of drop from the lip of the chute to the belt should also be as little as practicable.

Wear can be reduced at the loading point in any installation by following these practices:

1. Use rubber-covered pulleys.

2. Cushion the load by installing shock-impact mountings made of metal and covered with rubber. If the load is heavy, it may be advisable to use pneumatic-tire idlers instead of a solid rubber-covered mounting directly under the belt at the loading point.

3. In some installations, such as coal handling, it is advisable to install baffle bars or plates to break the fall of the load before it reaches the belt.

GENERAL CARE. Precautions for the general care of a conveyor belt include:

1. Wear at the edges of the belt can be avoided by not permitting the belt edge to run against the sideboard. A leather flange or cover over the board will minimize friction if it is necessary to have the belt free of narrow openings at the edges.

2. Keep the belt free of oil. Pulleys should be kept clean, and bearings should never be overlubricated. Besides decreasing the life of the conveyor belt, oil from the belt will damage textile materials in many installations.

3. Idler pulleys and the tail pulley should be inspected periodically to make certain that they are turning. Frozen pulleys are one of the most frequent sources of damage to conveyor belts. While care should be observed to insure against overlubrication, it is equally important that idler and tail pulleys be kept clean and sufficiently lubricated.

4. Lumps trapped between the belt and a pulley causes unnecessary flexing of the belt and friction. This danger should be watched closely on installations where coal, cotton, and yarn are handled. Edge wear of the belt is often caused by yarn wrapped around a pulley.

5. The speed of the belt should be carefully regulated to accommodate the load. It is easy to cause more wear from running than from carrying a load. It is possible in many applications to increase the load up to belt-load capacity by slowing down the speed and thereby increase belt life.

6. Crooked running of the belt will shorten its life. Misalignment of idler pulleys and belt ends not cut square are the two most frequent causes of crooked running. If a belt often runs off the same idler or often runs against the same sideboard at the same idler, the idler should be checked for alignment. If the same part of the belt, particularly near a splice, runs off the pulley or against the sideboard often, the cut of the belt at the splice should be checked for squareness.

7. Metal splicing fasteners will quickly pull out of rubber belts which usually requires that a new cut be made. If a new cut is required, the length of the belt is shortened. More than one cut usually makes it necessary to piece the belt. To avoid metal

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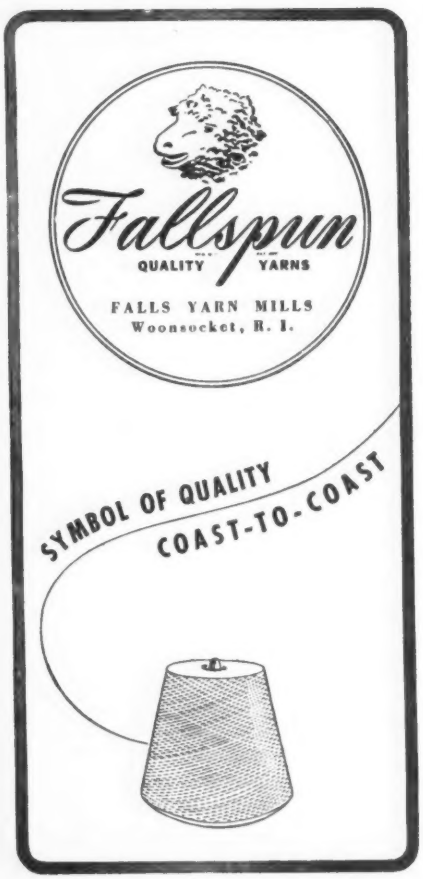

fasteners, vulcanize the splice so that the belt is endless.

8. Protect the belt from excessive moisture that might cause the base fabric to shrink or mildew, from direct sunlight, excessive heat (above 150° F.), and acid fumes that might attack the base fabric.

Motors Give Warning Before They Fail

A motor seldom goes bad without giving the maintenance man plenty of warning. There are symptoms of motor trouble that can be seen, heard, or felt, according to information released by Allis-Chalmers Mfg. Co.

Attention to these warnings can keep a motor running:

1. Sparking at brushes and a blackened commutator. Possible causes for this condition include:
   - Rough commutator.
   - Low or high bar on commutator.
   - High mica.
   - Brushes too short.
   - Not enough tension on brushes.
   - Weak brush springs.
   - Brushes sticking in holders.
   - Dirty or oily commutator.
   - Water dripping on commutator.
   - Armature winding shorted.
   - Open armature winding.

2. Charred insulation. The cause is usually overheating.

3. Motor won't start. The trouble most often is in the line—possibly a short; but don't overlook the possibility of an overload. If a check of the power source does not locate the trouble, disconnect the load and see if the motor will run.

4. Excessive hum. An uneven air gap or an unbalanced rotor may cause it.

5. Regular clicking. Foreign matter in the air gap will cause it.

6. Knocking. Misalignment causes the shoulder of the shaft to knock against the bearing end.

7. Brush chatter. Motor vibration is the cause.

8. Vibration. This may be caused by a condition in the motor or in the driven machine. If the vibration is in the motor, the cause may be the rotor out of balance.

9. Hot motor. Causes may be an overload, dirt in the motor, rotor rubbing on the stator, or a ground.

10. Hot bearing. Causes: misalignment, too much tension on the drive belt, too much end thrust, too much grease, a sticking oil ring, or not enough lubricant.

11. Hot commutator. The trouble is usually in the brushes; you are using an incorrect grade of brushes, or you have too much pressure on the brushes.

Books of Interest

German Textile Testing

TEXTILE TESTING IN GERMANY, by H. F. Schiefer, L. Fourt, and R. T. Kropf; Textile Research Institute, Inc., 10 East 40th St., New York 16, N. Y.; 58 pages, $3.50.

This report is derived from information obtained in Germany by TIIC for the office of the Quartermaster General. Test procedures and equipment are described and illustrated in detail. They have been regarded as important because of the reputed success of the German industry in quality control and research technique. The book contains many photographs, diagrams, charts, and tables; and its text reflects the thinking of German technicians on the aims and possibilities of the science of textile testing.

What Caustics Do to Cellulose

ACTION OF ALKALI ON CELLULOSE, by Dr. Albert Schaeffer; Hobart Publishing Co., Box 4127, Washington 15, D. C.; 94 pages, $5.00.

This is a German scientific work translated originally by the office of the Quartermaster General, U. S. Army. Dr. Schaeffer had prepared the report as result of work in the Textile Application Laboratory of I. G. Farbenindustrie, Hoechst. Full data at various stages in washing and laundering processes under various conditions, related to effects of cleansing agents on cottons and rayons, are reported in text, charts, and tables. Photomicrographs of treated and untreated fibers are given.

More on Statistical Quality Control

STATISTICS AND TEXTILES, by Jacob K. Frederick, Jr.; Bulletin No. 3, Series 51; Lowell Textile Institute, Lowell, Mass.; 16 pages.

The author, who is an assistant professor at Lowell, discusses the application of statistics to textile sampling and testing. He shows how statistics can be used to control quality during

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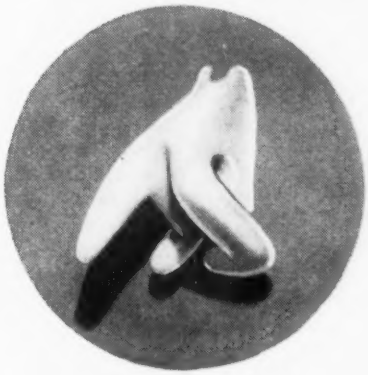

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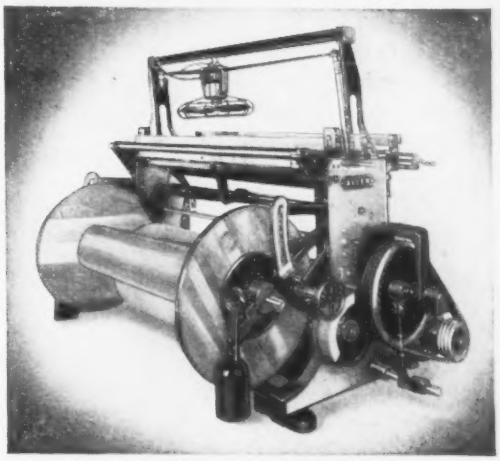

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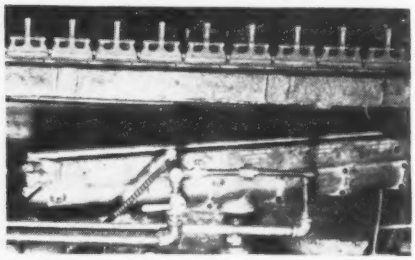

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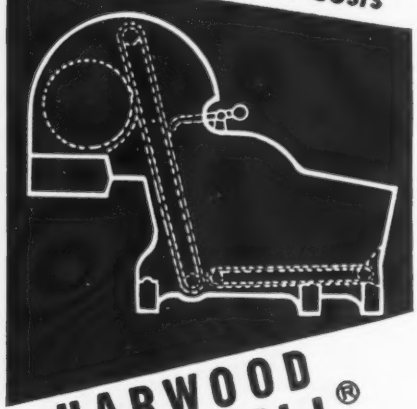

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manufacture, to establish specifications for buying and selling of goods, and to evaluate experimental work. Any sampling system not based on statistical concepts, he points out, is not a sampling plan at all but merely a testing program; for not only is the risk of the deviation involved not known, but the relationship of the sample to the lot is at best a mere guess.

New Yarn-Numbering System

INTEGRAL, A NEW NUMBERING SYSTEM, by Squire Blackshaw; St. Hyacinthe Technical School, St. Hyacinthe, Quebec, Canada; 16 pages.

Squire Blackshaw is instructor of cotton spinning at St. Hyacinthe Technical School, and he has developed a count system based on whole numbers. This system has direct relation to the size, that is, the count decreases as the size of the yarn decreases. The count is the number of pounds per 700,000 yd., or the number of grains per 100 yd. Weighing 100 yd. gives the yarn count direct from the grain scale. The pamphlet indicates the advantages of the system in making common calculations in the mill, and gives tables of comparative yarn numbers, not only in cotton but also in woolen, worsted, linen, and denier systems.

A Bucks County History

INDUSTRIAL BUCKS COUNTY, by Dr. A. D. Graeff, Textile Machine Works, Reading, Pa.; 36 pages.

The contribution of the textile industry to the growth of Bucks County, is told in one chapter of this book published to commemorate the 200th anniversary of the city of Reading. The author is an authority on Pennsylvania Dutch folklore, and an instructor in history and social sciences at Overbrook, Pa., High School. The illustrations, by Florence Starr Taylor, of Lancaster, Pa., are based on two years of historical research.

Big Business in India

THE STORY OF TATAS, 1887-1947, by Aubrey Menon; Tata Sons, Ltd., Bombay, India; 40 pages.

The group of companies headed up by Tata Sons, Ltd., represents the largest single aggregation of industry in India with total capital investment of $248,000,000. It was founded 60 yr. ago. In addition to making steel, building locomotives and aircraft, owning utilities, etc., the firm owns four textile companies which employ 37,000 operatives on 286,000 spindles and 7,100 looms with annual sales of $30,600,000 and capital of $27,000,000. This booklet sketches the career of the company and its chief executives, and stresses the fact that this industrial empire was built by Indians with Indian capital and Indian workers.

A British Wool Directory and Annual

THE WORLD'S WOOL, 1946-7; The Wool Record, Ltd., 10 Booth St., Bradford, England; 20 shillings, 694 pages.

This large-format, cloth-bound book contains over 130 pages of general information relative to the British wool trade, including statistics, prices, details of acts and agreements, data on commercial organizations and technical schools, and the history of wartime controls. The directory section covers 300 pages, followed by 100 pages on materials suppliers, and concluding with sections on trade-marks, textile machinery, etc.

Other Books of Interest

THE CATHODE-RAY TUBE AND TYPICAL APPLICATIONS; Instrument Div., Allen B. Du Mont Laboratories, Inc., 1000 Main Ave., Clifton, N. J.; 50¢.

DIRECTORY OF COLORADO MANUFACTURERS, 1948; Colorado Resources Development Council, Inc., Room 301, Kittredge Bldg., Denver 2, Colo.; 52 pages, $2.50.

DIRECTORY OF ENGINEERING DATA SOURCES; Southeastern Research Institute, Inc., Atlanta, Ga.; 66 pages, $2.50.

HOW FAMILIES USE THEIR INCOMES; Miscellaneous Publication No. 653; U. S. Dept. of Agriculture, Washington 25, D. C.; 66 pages, 30¢.

DIRECTORY OF THE NARROW FABRIC INDUSTRY; Narrow Fabric Div., Cotton-Textile Institute, 271 Church St., New York 13, N. Y.; 42 pages.

INDEX TO ASTM STANDARDS; American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.; 240 pages.

COMMUNITY RELATIONS, by Dudley, Anderson & Gutzy; Cotton-Textile Industry-wide Committee on Public Relations, 551 Fifth Ave., New York, N. Y.; 50 pages.

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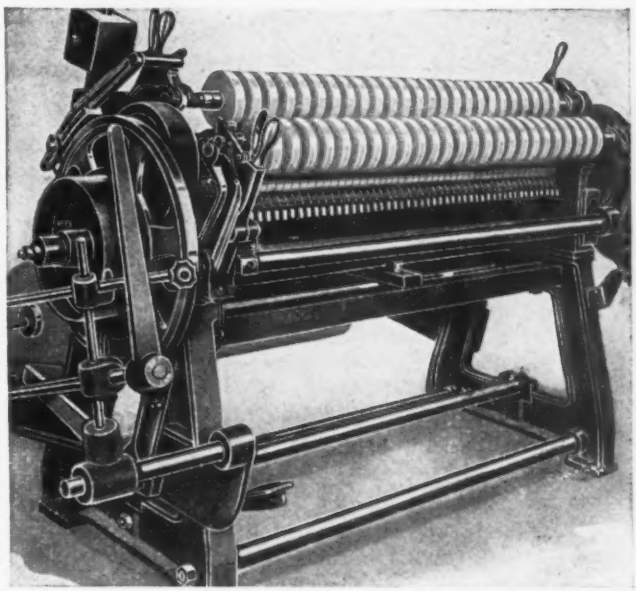

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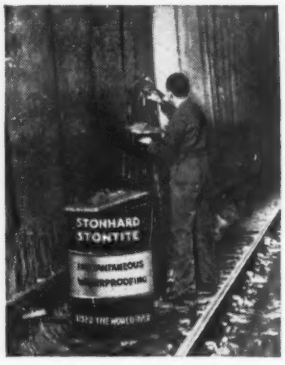

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News of the month

NACM Program. Feature of the 94th annual meeting of the National Association of Cotton Manufacturers at the Marshall House, York Harbor, Maine, on Sept. 16, will be a panel discussion under the leadership of Prof. Erwin H. Schell, in charge of business and engineering administration, M.I.T. Following are the speakers and subjects: Maj. Gen. W. H. Middleswart, QMC, chief, Military Planning Division, "Organizing the Cotton Industry for War"; William C. Planz, vice president, Neuss, Hesslein & Co., "The Future of Exports"; Ford Hinrichs, economist, U. S. Economic Cooperation Administration, "The Domestic Outlook"; Paul E. Jackson, editor, *Worth Street Forecast*, "Worth Street Forecast"; Dr. Donald H. Powers, technical adviser, Monsanto Chemical Co., "Probable Trends in Finishes"; Walter K. Shaw, Jr., president, E. A. Shaw & Co., "The Outlook for Long Staple Cottons." At the annual banquet, Herman D. Ruhm, Jr., president of Bates Mfg. Co., Lewiston, Maine, will preside. Recreational features including plant visits are scheduled for Sept. 17.

New York Show Next March. The second International Textile Machinery, Equipment & Supplies Exposition will be held in New York at the 71st Regiment Armory Mar. 21 through 25, 1949. The forums held in conjunction with the exposition four months ago will be expanded next year; and, according to Arthur Tarshis, exposition manager, attendance at the show and forums will be restricted to members of the industry.

Piedmont Sect., AATCC, Elects. P. E. Smith, of Riegel Textiles, Ware Shoals, S. C., has been elected president of the Piedmont section, American Association of Textile Chemists & Colorists, at the recent annual summer meeting at Myrtle Beach, S. C. He succeeds John Neely of Burlington Mills, retiring chairman. Other officers elected include R. H. Smith, of High Point, N. C., vice chairman; Ed Briggs, of Southern Franklin Process, Greenville, S. C., secretary; Hobart Southers of Cone Mills Laboratories, Greensboro, N. C., treasurer.

Japan's Cotton Goals. Tokyo (*McGraw-Hill World News*)—Japan's cotton industry will produce about 650,000,000 lb. of yarn in 1950 according to recent estimates of the Textile Div. of the Economic & Scientific Section

Textile Calendar

American Instrument Fair, Convention Hall, Philadelphia, Sept. 13 to 17, 1948.

NACM, annual meeting, Marshall House, York Harbor, Me., Sept. 16, 17, 1948.

All-Canadian Textile Seminar, Queens University, Kingston, Ontario, Sept. 17 and 18, 1948.

Fifth Spinner-Breeder Conference, Hotel Greenville, Greenville-Stoneville, Miss., Sept. 20 to 22, 1948.

Southern Hosiery Manufacturers Association, annual meeting, Sheraton Bon Air Hotel, Augusta, Ga., Sept. 24 and 25, 1948.

National Plastics Exposition, Grand Central Palace, New York, Sept. 27 to Oct. 1, 1948.

Southern Textile Exposition, Textile Hall, Greenville, S. C., Oct. 4 to 9, 1948.

New England Materials Handling Exposition, Mechanics Hall, Boston, Mass., Oct. 5 to 7, 1948.

National Chemical Exposition, Chicago Coliseum, Chicago, Oct. 12 to 16, 1948.

National Cotton Council's 1948 Beltwide Cotton Mechanization Conference, Lubbock, Texas, Oct. 14 to 16, 1948.

Textile Operating Executives of Georgia, meeting, Atlanta, Ga., Oct. 16, 1948.

National Safety Congress & Exposition, Chicago, Oct. 18 to 22, 1948.

Committee D-13 of ASTM, Washington, D. C., Oct. 20, 21, and 22, 1948.

AATCC, annual convention, Sheraton Bon Air Hotel, Augusta, Ga., Oct. 21 to 23, 1948.

Cotton-Textile Institute, annual meeting, Waldorf-Astoria, New York, N. Y., Nov. 11, 1948.

Textile Research Institute, annual meeting, New York, Nov. 18 and 19, 1948.

18th National Exposition of Power & Mechanical Engineering, Grand Central Palace, New York, N. Y., Nov. 29 to Dec. 4, 1948.

American Society for Testing Materials, annual meeting, Atlantic City, N. J., June 27 to July 1, 1949. ASTM committee week and spring meeting, Chicago, Feb. 27 to Mar. 4, 1949.

National Cotton Council, 11th annual meeting, Los Angeles, Calif., Mar. 7 to 9, 1949.

Second International Exposition of Textile Machinery, Equipment, & Supplies, 71st Regiment Armory, New York, N. Y., Mar. 21 to 25, 1949.

American Cotton Manufacturers Association, annual meeting, Palm Beach, Fla., Mar. 31, Apr. 1 and 2, 1949.

Knitting Arts Exhibition, Atlantic City, N. J., April 25 to 29, 1949.

American Textile Machinery Exhibition (and Allied Industries) sponsored by National Association of Textile Machinery Manufacturers, Atlantic City Auditorium, Atlantic City, N. J., May 8 to 12, 1950.

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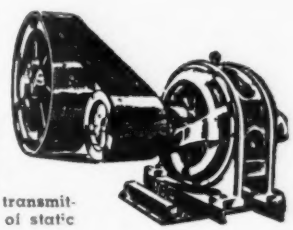

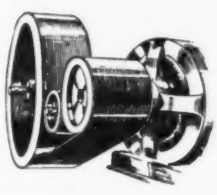

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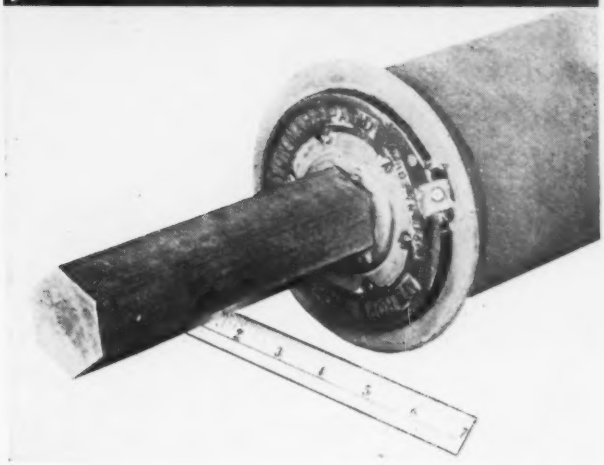

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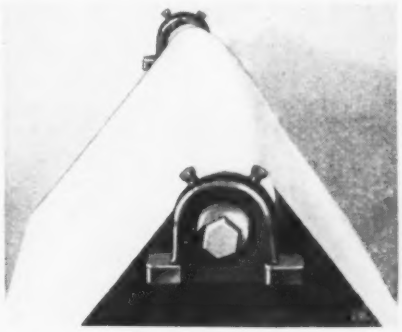

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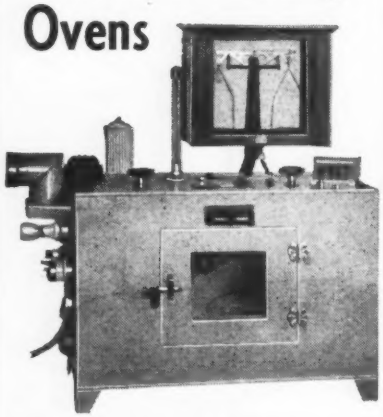

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of SCAP. This figure is about 200,000,000 lb. less than original SCAP estimates. For 1950, 400,000,000 lb. of yarn will be available for export manufacture. Exports for the current year will be just short of 250,000,000 lb. of yarn out of a production of 350,000,000 lb. For 1949, production is calculated at 490,000,000 lb. and exports at 295,000,000 lb. Achievement of the present cotton-textile goal of 4,000,000 spindles cannot be expected before the end of 1949. Maximum operation from these spindles may not be obtainable prior to mid-1950. Raw-cotton requirements for 1948 are 850,000 bales. In 1949, approximately 1,200,000 bales will be needed, and about 1,700,000 bales in 1950.

India Is Short of Cotton. BOMBAY, India (*McGraw-Hill World News*)—The effect of Indian-Pakistan partition is sharply underlined in official raw cotton figures for the current "cotton year." The carryover of Indian cotton with the trade at Sept. 1, 1948, is expected to be only 100,000 bales compared with 1,700,000 bales carryover on Sept. 1, 1947. More important: even with imports of 400,000 bales of foreign cotton, the net position of the Indian textile industry is expected to be a deficit of 200,000 bales. Nub of the situation is that pre-partition Pakistan areas supplied about 700,000 bales (mostly long staple) annually. This year not more than 400,000 are expected, due to Pakistan exports to other countries in exchange for commodities India cannot supply. Pakistan and India have agreed to exchange cotton and cotton textiles on the basis of 20 bales of raw material for 12 bales of finished cloth.

Aussie Textile Industry Gets Boost. Canberra's decision to let Australians pay the full price for imported textiles, instead of rigging the market with equalizing subsidies, is giving the dominion's textile industry the second chance of a lifetime. The first chance came and went during World War II. Price ceilings will be pulled away shortly from 30,000 commodities, and even though some clothing items will remain under control, scrapping of the subsidy on imported textiles must necessarily boost wholesale prices to international levels. Australia's cotton-textile industry played its hand for all it was worth as long as World War II and its shortages lasted. Capacity and production expanded rapidly, but after V-J Day the game looked less attractive. This was due partly to the prospect of renewed Japanese competition, and partly to the government's refusal to allow the industry to hoist its prices to higher U. S. and British levels. Instead, it brought the cost of imported cotton goods down to the Australian cost-plus basis by making up the difference out of taxpayers' pockets.

Drop Delivered Prices. Two producers of rayon yarns, the Industrial Rayon Corp. and E. I. du Pont de Nemours & Co., have changed from a delivered price basis to an f.o.b. plant, no freight allowed basis. This means that, while current prices per pound have not been changed, the cost of the yarns to users will vary somewhat according to the difference in freight costs from the producers' plants. It is stated that these two companies changed their pricing methods because of the recent decision of the United States Supreme Court in the Cement Institute case in which the court, in substance, held that the multiple basing-point system used generally by the cement industry resulted in price discriminations and was, therefore, illegal under the Trade Commission Act and the Robinson-Patman Anti-Price Discrimination Act.

AATCC Monographs. The Publication Committee of AATCC is formulating plans for publication of its first monograph this fall. It will cover textile-testing methods. Plans are being laid for AATCC Monograph No. 2 on the subject of "The Application of Vat Dyes," to be written by specialists in this field.

Safety Meetings in Five Hotels. The 36th National Safety Congress & Exposition, sponsored by the National Safety Council, will be held in Chicago from Oct. 18 to 22. Five hotels will house the sessions and displays. They are: Stevens hotel, for industrial safety exposition and industrial sessions; Sherman hotel, for public safety exposition and traffic, farm, home, and women's safety sessions; Morrison hotel, for industrial and school and college sessions, and Congress and La Salle hotels, for industrial sessions.

India's Machine Output. CALCUTTA (*McGraw-Hill World News*)—India's premier textile machinery manufacturer, the Birla-controlled Textile Machinery Corp., Ltd., recently completed the 101st ring-spinning frame at its suburban factory. Present capacity has been stepped up to a monthly level of 26 ring frames and 15,600 spindles. Three other companies also are manufacturing textile machinery.

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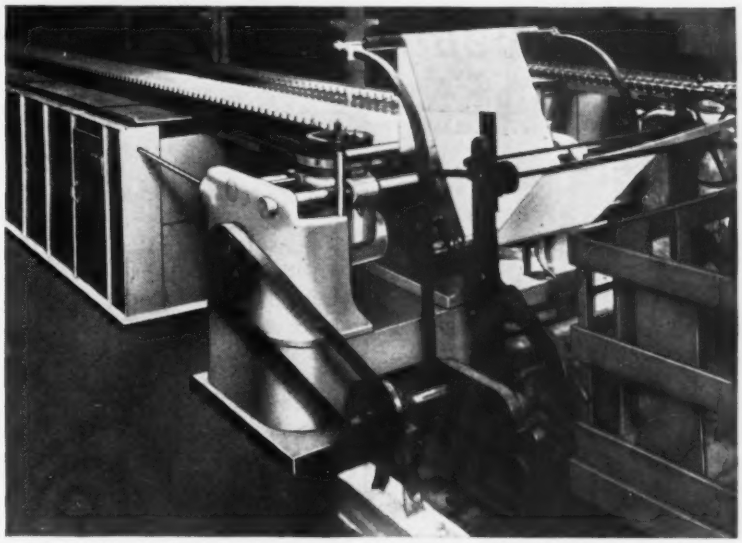

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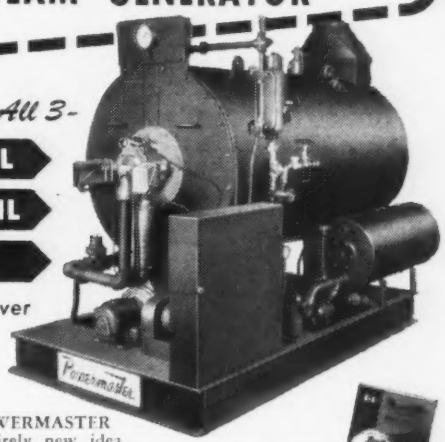

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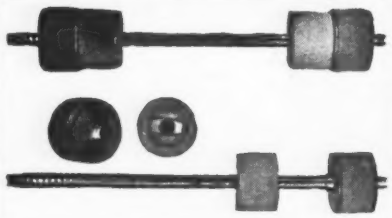

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Textools Ltd., Coimbatore, and Acme Mfg. Co., Bombay, have not gotten into full production on ring frames and spindles while another Birla company, Texmaco (Gwalior), Ltd., is turning out looms at a rate of 2,000 a year. Despite the activities of these companies, India is far short of meeting her requirements, which are estimated at over 8,000,000 spindles in the next five years with a value of about $300 million.

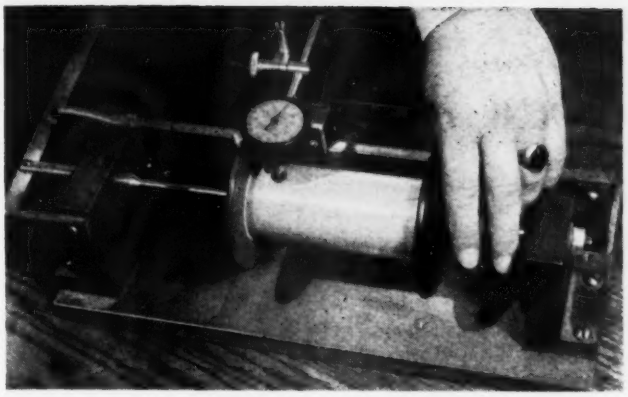
Testing Apparatus. AATCC policy in regard to production and distribution of testing apparatus, test fabrics, and standards has been put in the hands of a standing merchandising committee. It is AATCC policy to assign to an approved manufacturer exclusive rights to the production of new AATCC equipment and authorize the use of the AATCC official label. On his part, the manufacturer is obligated to follow AATCC specifications rigidly, carry stock, make deliveries, and do the billing. The association makes available to industry essential testing equipment and is compensated by modest royalties which to some extent offset its expenditures for creative research. The merchandising committee includes H. F. Herrmann, Dr. H. C. Chapin, W. R. Moorehouse, J. R. Bonnar, and Dr. H. W. Stiegler.

Asks Accuracy in Social Security Returns. Most businessmen know that the Bureau of Old Age & Survivors Insurance (part of the Social Security Administration, Federal Security Agency) is the government agency responsible for administration of the complex federal old-age and survivors insurance program. The bureau needs accurate returns for many reasons including the fact that quarterly social security returns are used for compiling statistics for use of industry and business in market research and other business planning. Such data for the first quarter 1946 were recently published by the Department of Commerce. When Federal social-security returns are prepared, (Form SS-1a), the bureau asks that particular attention be given to the item which covers the number of persons employed during the pay period which ended nearest to the 15th of the third month in the quarter. The figure should include all employees on the pay roll during that period whose services are covered by the Social Security Act. However, the figure should exclude persons who received no compensation during that pay period (as, for example, persons who received compensation prior or subsequent to the pay period, but not in this pay period); pensioners; and others not on the active list. The number of active employees during a single pay period of the first quarter of each year is quite likely to be smaller than the total number of employees listed on quarterly returns, because of labor turnover and seasonal employment. For the second, third, or fourth quarter of the year, the number of employees during a single pay period may possibly equal or exceed the number of employees whose names are listed on the return, when the $3,000 limit on taxable wages obviates the need for listing employees for whom the employer has previously reported taxable wages of as much as $3,000.

Comparative Dyeing Properties. The Sectional Advisory Research Committee of the AATCC Piedmont Section, under the leadership of Chairman V. B. Holland has arranged with Clemson College to have graduate students assigned to three projects of interest. These projects are: (1) A comparative evaluation of the dyeing properties of normal rain-grown versus irrigated cotton, using California irrigated and Mississippi Stoneville 2B rain grown; (2) Identical with number one, except the cottons studied will be Arizona irrigated and Texas rain grown; (3) Effect of some variables on dyeing of viscose rayon with vat and naphthol dyes. Jade Green and Blue BCS for the vat dyes and Naphthol AS-SW with Red B and Red KB bases will be used.

N. C. Fund Tops $1,000,000. A personal contribution of $6,000 from W. J. Carter, president of Carter Fabrics Corp., of Greensboro, has increased the total funds of the North Carolina Textile Foundation, Inc., to $1,000,000. Funds contributed to the foundation are used in making salary supplements for research authorities and faculty members in the School of Textiles, N. C. State College, Raleigh.

PTI to Break Ground. The formal ceremony of breaking ground for the new Philadelphia Textile Institute at its recently acquired site at School Lane and Henry Ave., Germantown, Pa., will take place at 2 p.m., Sept. 15, 1948. Theodore B. Hayward, chairman of PTI Foundation's building committee, said that he hoped all the school's friends and supporters would take this occasion to visit the site and attend the ceremonies.



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NEWS ABOUT Suppliers

Saco-Lowell Shops, Biddeford, Maine, has purchased land, buildings, and equipment of Edwards Co., Sanford, N. C., a machinery plant well adapted to the manufacture of textile machinery. It is expected that in a relatively short period, the unit will be producing Saco-Lowell products. The Edwards Co. maintained an outstanding record during the war as a producer of high-precision airplane parts, with five awards of the Army-Navy "E" flag. Saco-Lowell will operate the newly acquired plant under the direction of the same local management that was responsible for so notable a record. The move will place Saco-Lowell in a better position to serve its customers, many of whom are located in the Southern states.

Universal Winding Co., Providence, R. I., has made sales assignments as follows: John Breen, of Atwood Div., is now located in the Universal office at 1080 Drexel Bldg., Philadelphia; Edward C. Parish, Jr., has been transferred from the Boston sales office to assist William Quinn in the Philadelphia office; Dudley M. Dunlop is now with the Boston sales office replacing Mr. Parish.

Ernest L. Frankl Associates, New York, N. Y., has been appointed sole representative of S. A. Officini Meccanica S. Andrea Novara of Italy, one of Europe's large worsted machinery manufacturers. S. Andrea has for 25 yr. manufactured a complete line of machinery for combing, preparation, spinning, and twisting of worsted yarn on the French system. Early deliveries are offered.

Oscar Kohorn & Co., Ltd., New York, N. Y., is completing a moving-picture record of rayon-plant construction and rayon manufacturing. Scenes taken at the sites of Kohorn's various rayon plant and machinery installation projects are being combined with views taken at the Kohorn experimental and training station. The film is a pictorial demonstration of the establishment and operation of rayon plants. To widen knowledge of the rayon field, a scholarship in the manufacture of rayon has been established by Oscar Von Kohorn, president of the company. It provides young foreign engineers and chemists with post-graduate courses in leading American colleges and technical training in rayon production.

P. W. COLEMAN has been appointed by Emmons Loom Harness Co., Lawrence, Mass., as exclusive representative in North and South Carolina for the company's full line. His headquarters will be in Greenville, S. C.

Goodyear Tire & Rubber Co., Akron, Ohio, is organizing a chemical division to handle its expanding sales program for synthetic rubber and its combination with other raw chemicals. Herman R. Thies is manager of the new division.

Draper Corp., Hopedale, Mass., has leased the former Washburn Planing Mill property at Gray, Ga., to convert it to a shuttle-block plant. James E. Rogers will be local manager.

Warner & Swasey Co., Cleveland, Ohio, has appointed Myron S. Curtis as director of engineering and elected him to the board of directors. He succeeds William J. Burger, who retired June 30. Mr. Curtis joined Warner & Swasey in 1940, and was one of the members of the planning committee named in 1943 to guide the investigation and development of new products. In this capacity, he has been largely

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For name of nearest member firm, write to PAGE FENCE ASSOCIATION in Monessen, Pa., Atlanta, Bridgeport, Chicago, Denver, Detroit, Los Angeles, Philadelphia, Pittsburgh, New York or San Francisco.

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Engineered Ability

WALHARD'S Biggest Asset!

HARD CHROMIUM PLATING has *proved* its value in the protection of textile machine parts against wear and corrosion and WALHARD has proved to leading textile manufacturers that ENGINEERING ABILITY means "the best in hard chromium plating!"

Universal Winding, Foster, Whitin, H & B and many other outstanding names in the textile field know that chromium, the hardest known commercial metal that can be electroplated assures NEW LIFE for textile parts. Textile men know chromium is impervious to alkaline solutions and can be applied to most metals . . . that chromium protects the underlying metal, and materials as liquids can be easily wiped off leaving a clean surface.

We would like to demonstrate WALHARD ENGINEERED ABILITY TO YOU *NOW!* The quickest way to do it is to let us WALHARD FiNISH a trial lot of textile machine parts that need wear and corrosion protection.

We'll rest our case on your decision after the WALHARD FINISHED parts have been returned and tested.

Walhard

The *Engineered* Industrial Hard Chromium Plating Service

WALTON and LONSBURY

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WILLIAM Whitman COMPANY, INC.

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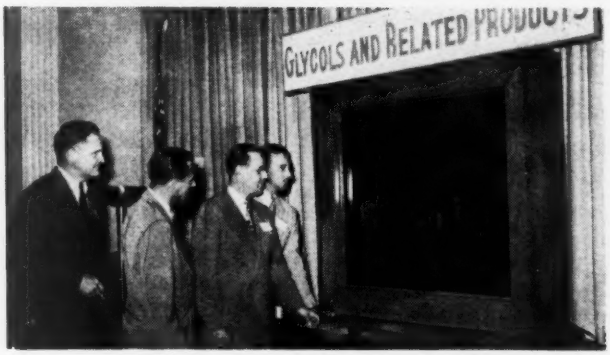
NEWS ABOUT *Suppliers* (Continued)



WYANDOTTE CHEMICALS CORP., Wyandotte, Mich., brought its sales executives in to attend the recent Research Dept. staff meeting. Shown, left to right, are Howard Roderick, manager organic, chlorine, and calcium-carbonate sales; Bert Cremers, vice president in charge of sales, Michigan Alkali Div.; Dr. Thomas H. Vaughn, research vice president; and Luke Reid, assistant to Mr. Roderick. Mel Clark, manager heavy-chemical sales, was not present when photo was taken. The diagram is an electronically operated flow diagram of Wyandotte's glycol production.

responsible for the development of the Warner & Swasey Sulzer weaving machine. He was named assistant director of engineering in 1945. Earlier in his career, he spent 25 yr. with Potter & Johnston Machine Co., Pawtucket, R. I.

Bullard Clark Co., Danielson, Conn., has announced through Edward J. Bullard, president and treasurer, that the recent death of his father, W. Irving Bullard, chairman of the board, will not change any policies or capital structure of the company, and that all of the voting stock is owned by the active management.

Union Special Machine Co., Chicago, exhibited some of its newest models at the Textile Merchants & Associated Industries convention in St. Louis, Aug. 23 to 25, and at the Southern Garment Manufacturers Association's meeting in Ft. Worth, Tex., Aug. 30 to Sept. 1.

Uster Corp., Charlotte, N. C., has been established to handle the engineering, distribution, installation, and servicing of weaving-preparatory equipment and testing instruments. It is understood the firm will represent Zellweger, Ltd., Switzerland.

Calco Chemical Div., of American Cyanamid Co., Bound Brook, N. J., has put into operation the third production unit at its new plant at Willow Island, W. Va. The first unit produces folic acid and pharmaceuticals. The second unit makes iron blue. The third and final unit produces melamine.

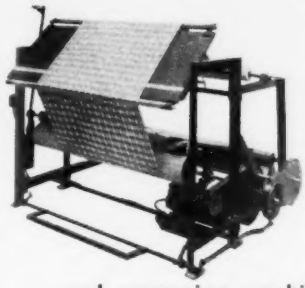
Brown Instrument Co., Philadelphia, has added to its sales and service staffs as follows: Atlanta: G. L. Ferguson, assigned as a sales engineer; Boston: Warren N. Smith and Albert E. Phillips, service engineers; Charlotte: W. Williamson, Jr., service, and R. J. Holt, sales; Chicago: Bernard Fuller and Ormond Herring, sales; Cleveland: R. Schumaker, sales; New York: A. Godfrey, sales, and Ernest P. Lang, William C. Meyer and Edward J. Roach, service; Philadelphia: A. L. Rogers, Jr., sales, and Albert T. Collins, Joseph Facer, and Edward A. Lytle, service.

United States Testing Co., Inc., Hoboken, N. J., has added Comdr. Finn Ronne to its scientific staff. Mr. Ronne is an Antarctic explorer who recently returned from a 15 months' expedition to the continent surrounding the South Pole. He will formulate plans for establishing a climatological research laboratory to investigate phases of life in both the Arctic and Antarctic ranging from food, clothing, transportation, and health to the utilization of snow and ice as materials for building landing fields, as well as a study of the characteristics of ice and snow formations.

Philadelphia Quartz Co. removed its general offices on Aug. 2, to Public Ledger Bldg. Independence Sq., Philadelphia, Pa.

C. J. Tagliabue Corp. (N. J.) has opened a new sales office at 150 Broadway, New

A Typical Performance with HERMAS efficient CLOTHROOM EQUIPMENT



8 YEARS OF TROUBLE-FREE USE.

Recently a new customer came to us because he had seen an old Hermas winding and measuring machine in use in the plant of a friend.

The machine he saw had been sold eight years before with only one early service call to get a belt adjusted.

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That's the kind of use mills get from HERMAS equipment.

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HERMAS MACHINE CO.

America's only exclusive specialists in Clothroom Equipment

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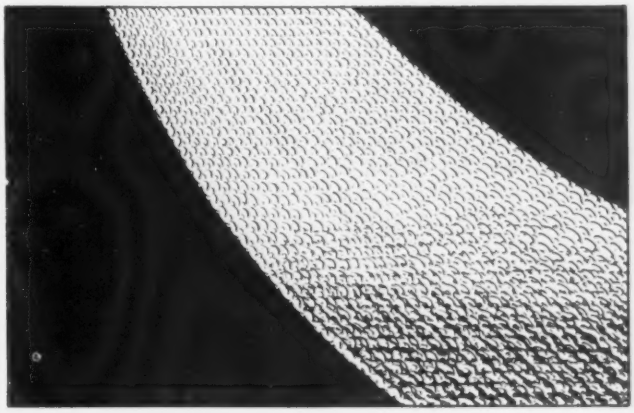
FOR SPINNING, TWISTING, SPOOLING, WEAVING

Basket weave spinning tape
weave spinning tape
Herringbone
"BILTRITE" CANVAS LUG STRAP
(PATENTED)
Basket weave twister & spooler tape
Double loop hook bands for cards, twisters, spoolers, etc. (all lengths and diameters)
Mule ropes all sizes diameters
Braided spindle banding for mules, etc.

LAMBETH ROPE CORPORATION
NEW BEDFORD, MASS., U. S. A.

*Scott Testers show

. . . the physical characteristics of textiles from a single fibre to a mechanical fabric.



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POWERS new type 190 Hygrostat may be your answer. It is pneumatically operated, sensitive to the slightest changes in relative humidity. Users state "it is the most accurate hygrostat made."

Controls valves or dampers in connection with heating or cooling coils, humidifiers, air washers, humidifying atomizers, spray nozzles, etc.

Used in processing and storage rooms in textile mills, industrial plants, laboratories, printing plants, telephone exchanges, and comfort air conditioning systems in all types of buildings.

Easy to install. Room and duct type instruments. Test one. You'll buy more to replace obsolete, inaccurate controls. Get Bulletin 302 for complete details.

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Over 55 years of TEMPERATURE and HUMIDITY CONTROL

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TO THE TEXTILE INDUSTRY FOR OVER ⅓ CENTURY

Surveys—Reorganizations—New Plant Developments for Cotton, Wool, and Synthetic Yarn and Cloth Processing, Bleaching, Dyeing, Printing and Finishing.

★ Plant Appraisals ★ Mechanical and Operating Surveys—New Methods ★ Scheduling and Planning ★ Work Load Studies, Job Analysis and Evaluation, with Incentive Plans ★ Standard Cost Installations ★ Cost Control Methods

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BARNES TEXTILE ASSOCIATES, Inc.

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318 MONTGOMERY BLDG., SPARTANBURG, S. C.

The following is a typical letter written by a client, indicating the range and quality of service rendered by the Barnes engineers:

"We have employed Barnes Textile Associates, Inc., regularly since 1928. During this period we have consulted them on an infinite variety of problems having to do with the efficient operation of a textile plant.

"They have installed our cost systems, labormeters, carried out time and operating studies, worked with us in labor conferences, installed quality controls, advised us with regard to merchandising, assisted us in the purchase of machinery, laid out one completely modern plant which is in operation today, employing 2,300 employees, and have submitted plans for an additional plant and modern dye house.

"We consider them the outstanding textile engineers in the country today, both with regard to ability and integrity, and, during our nineteen years of close contact with this firm, their services have been invaluable."

NEWS ABOUT *Suppliers* (Continued)

York. Company is a wholly-owned subsidiary of Weston Electrical Instrument Corp., Newark, N. J. L. M. Hackenberg, Tagliabue's New York district sales manager, will supervise activities of the new sales office.

Mathieson Chemical Corp., New York, has elected Thomas S. Nichols, president and chief executive officer, to the additional post of chairman of the board to succeed the late George W. Dolan. J. C. Leppart, vice president, was elected a member of the board to fill the vacancy caused by Mr. Dolan's death, and was appointed executive vice president.

Amalgamated Chemical Corp. has opened new Southern division offices at 1819 Spring Garden St., Greensboro, N. C.

Firestone Plastics Co., Akron, Ohio, has removed to the Firestone plant at Pottstown, where all plastic activity, including sales, will be integrated. Development and production have been located there. Roger S. Firestone is president of the plastics company. Elmer H. French, general sales manager, is also moving from Akron to Pottstown. Other members of the sales staff who will have headquarters there are: Kenneth L. Edgar, manager of Velon film sales; E. A. Ryder, manager of Velon flex sales; Erle M. Brizard, manager of Velon filament sales, and M. D. Price, manager of Velon screening sales.

Link-Belt Co., Chicago, has appointed Crozier S. Wileman as district sales manager at Wilkes-Barre, Pa., to succeed A. C. Williams, retired.

Foxboro Co., Foxboro, Mass., has acquired the remaining space in the building which it occupies at 266 Freemont St., San Francisco, Calif., which will practically double the working space previously available. Harry B. Brooks is manager of the Pacific district.

Bailey Meter Co., Cleveland, Ohio, included in its 1948 cadet engineering class representatives of 23 universities and engineering colleges. The course consists of lectures on the theory of Bailey meters and control systems as well as factory training in the assembly and calibration of

WALTER E. BREWER has been appointed as district sales manager for its newly formed eastern district by Industrial Div., Nopco Chemical Co., Harrison, N. J. He will head up the present field force of five representatives and will be responsible for sales of products of Metasap Chemical Co. as well as for those of the Industrial Div. of the parent company. He has been with Nopco over 12 yr, lately as a sales representative in eastern Pennsylvania and previously in the same capacity in the New England area.

Bailey equipment. On completion of the course the engineers became part of Bailey's staff.

Glyco Products Co., Brooklyn, N. Y., has appointed Dr. Herbert Fineberg as chief chemist of Glyco Products Co., Inc., Brooklyn, N. Y., and Natrium, W. Va. He has specialized on butadiene polymers and copolymers, plasticizers, plastics, and textile lubricants. Glyco has also appointed Samuel Cohen, formerly its senior chemist, to be chief chemist of the Brooklyn research laboratories until they are transferred to Natrium, W. Va. He will then assume the duties of liaison and coordination between the research, pilot-plant, and production departments.

Stearns Magnetic Mfg. Co., Milwaukee, Wis., has moved into a modern addition to its plant. The ground floor of the addition is devoted to a laboratory for research and testing and the second floor gives space for general and executive offices and engineering. Stearns has added William Brunkala to its technical staff as assistant to Harold W. Buus, physicist and research engineer in charge of the laboratory.

Diamond Alkali Co., Cleveland, Ohio, has appointed

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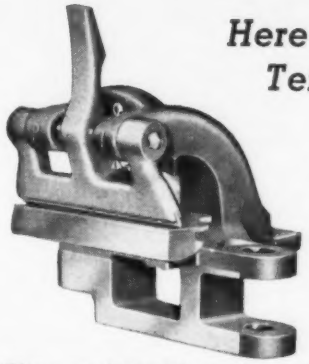
TENTER CLIPS

PARKINSON

TENTER SERVICE



Here Is An Unbeatable Tenter Combination!

Parkinson clips and links can be furnished with sprockets, idlers or openers for adaptation to any frame.

Parkinson repair service covers all makes of Tenter Clips and Parkinson's tenter survey service will give you without obligation an accurate picture of exactly what needs to be done to make your tenter operations 100% efficient!

Ask for special Parkinson Tenter Clip Folder Now!

EDWARD PARKINSON MFG. CO., INC.

387 Charles Street — Providence 4, R. I.

for Better Belt Joints

To keep belts in service longer, use only GENUINE Clipper Belt Hooks applied with Clipper Belt Lacers.

use Clipper Belt Hooks

Clipper Hooks are made of the finest quality wire—BETTER than ever before—produced for our exclusive use. Hooks hold with firm, sure grip—give longer satisfactory service.

and Clipper Belt Lacers!

The Clipper No. 9 Portable Lacer laces belts up to 6 inches wide in one quick, easy operation. Under powerful pressure hook legs are embedded flush with the surface of the belt and points clinched, making a perfect joint. Phone your mill supply jobber for a demonstration!

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Clipper

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The Weaver's Friend

Golden Anniversary

THE KEEVER STARCH CO. 1898-1948

KEESTAR PRODUCTS

★ PENETRATES THOROUGHLY

★ DEPENDABLE

★ CARRIES WEIGHT INTO THE FABRIC

★ ALWAYS UNIFORM

★ BOILS THIN

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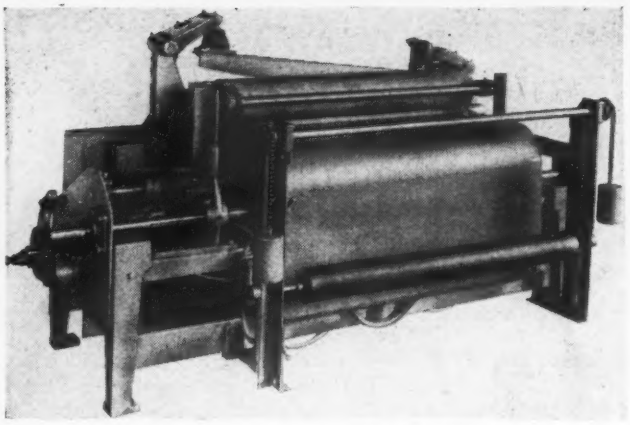

ALFA AUTOMATIC BATT CUTTER

Fully Automatic—Versatile—Speedy

Measures to length and cuts Cotton and Sisal Batts, Pads, Insulating Blankets and other materials with or without cloth or paper backing.

Readily synchronized to processing equipment or can be furnished as an individual unit.

Clean Cutting—No precision setting of Knives.

We will be glad to have your inquiries—pleased to submit full information.

Cutting equipment available from simple hand cutters to fully automatic machines.

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Design

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NEWS ABOUT *Suppliers* (Continued)

Henry B. Clark to the managership of its New York sales office. He has been branch manager of the company's Boston sales office since 1946.

Devoe & Raynolds Co. Inc., New York, has acquired the Bishop-Conklin Paint Co., Los Angeles, Calif. In addition to enlarging the present production facilities of Bishop-Conklin, a new synthetic-resin plant will be constructed.

Ansul Chemical Co., Marinette, Wis., has appointed Franklin Wedge, former eastern manager for Ansul, to be assistant to the president. He has moved from Philadelphia to the company's main office at Marinette.

Pennsylvania Salt Mfg. Co., Philadelphia, Pa. — Frederick G. Rodenburgh, New York district sales manager retired July 16 after nearly 50 yr. with the company. The New York sales office has been consolidated with the Paterson, N. J., sales office, at 152 Market St., Charles A. McCloskey, district sales manager, will be in charge of the new consolidated office.

Victor Chemical Works, Chicago, has appointed Morris R. Stanley as assistant director of sales.

Industrial Corrosion Control, Inc., Pittsburgh, Pa., whose chief service is lining industrial equipment with anti-corrosive coatings, has been recently incorporated with R. G. Forsberg, as president, who also serves as president of Penn-Ohio Industrial Sales Co., suppliers of industrial equipment, and Pittsburgh representative for Industrial Corrosion Control, Inc. James D. Clokey, Jr., is sales manager.

The B. F. Goodrich Co., Akron, Ohio, has named George J. Fischer as manager of national accounts of the Industrial Products Sales Div.

General Electric Co., Schenectady, N. Y., has named R. I. Parker, of Chicago, as a commercial vice president. He succeeded W. O. Batchelder, who retired after 43 yr. service.

W. B. Connor Engineering Co., New York, has appointed John H. Bartol, formerly passenger sales supervisor, American Air Lines, as director of its Air Recovery Div.

***EDSON K. GREEN** has been appointed general sales manager of International Salt Co., Inc., Scranton, Pa. He has been assistant sales manager since 1945 and prior to that time served as the company's New York City district manager. He has been with the company since 1929.*

L. J. Wing Mfg. Co., New York, has added two sales representatives in Canada. J. C. Davis Ltd., of Winnipeg, will represent Wing heating, ventilating, and combustion products in Manitoba, Saskatchewan, and Alberta. Control Equipment Co., of Toronto, will represent Wing in Ontario. Preston Phipps, of Montreal, will continue represensation in Quebec.

Flexible Steel Lacing Co., Chicago, has appointed William W. Hickey as representative in the New England and New York territory.

Packaging Machinery Manufacturers Institute will hold its 16th annual meeting at the Hotel Roosevelt, New York, on Oct. 12 and 13, 1948.

Electric Storage Battery Co., Philadelphia, has appointed Thomas G. Tynan to succeed Harry W. Beedle, retired, as manager of the Boston branch. He had been assistant manager. Herbert H. Warren has been appointed assistant manager of the New York branch.

Maple Flooring Manufacturers Association met recently in Oshkosh, Wis. President Abendroth, in his address of welcome, said, "With a production increase of 70% for the industry during 1947 compared with 1946, and with an increase of 47.9% for the first half of 1948 over the same period last year, it is gratifying to report that Northern hard maple is now nearing a normal and orderly distribution for the first time in 6 yr."

SOLUBILIZE YOUR STARCHES WITH

INTERSIZE*

(STARCH CONDITIONER)

MILL TESTS PROVE

- Cuts down time of size preparation to ten minutes (no cooking necessary)
- Usable with all types of starches.
- Eliminates additives (softeners, gums, binders activators).
- Increases yarn strength and elongation.
- Reduces shedding.
- Stabilizes size.

*We Recommend INTERSIZE** *(STARCH CONDITIONER)*

C—For Cotton, Jute, Hemp, and other vegetable fibers.

R—For spun and filament synthetic yarn.

W—For Wool and other animal fibers.

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** Registered Trade Mark. * Patent Pending on Intersize Process and Intersize (Starch Conditioner)*

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The men and women of Railway Express are your neighbors, too, wherever you may live. They work *with* you and *for* you to provide a *complete* shipping service for every one of your business and personal needs. You'll find them *dependable* neighbors, always ready to serve you with speed, efficiency and courtesy. It's good business to say, "Ship it RAILWAY EXPRESS!"

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SLIXONICE*

SADDLES and CAP BARS

Frictionless Oil Free Drafting Units

See the first radical improvement in years in saddles and cap bars.

Showing at the Greenville Textile Exposition, October 4th through 9th through the courtesy of

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Established 1876

BRISTOL, R. I., U. S. A.

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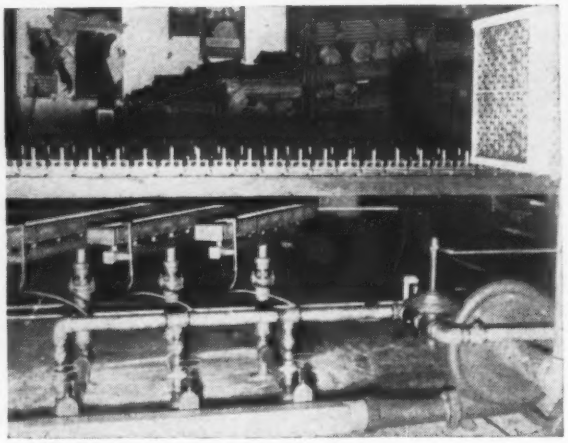

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→COMPRESSIVE SHRINKAGE←

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for use in shrinking fabrics to the *"Sanforized"* standard by the Compressive Shrinkage process, are daily meeting the most exacting requirements of finishers throughout the industry. From the lightest and finest fabric to the heaviest denim, there is a special Huyck blanket to meet your specific needs.

Huyck blankets retain high shrinkage and finish properties to the last.

***PALMER BLANKETS*—also available for your special requirements.**

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F. C. HUYCK & SONS

KENWOOD MILLS

Albany 1, New York

NEWS ABOUT *Mills*

Cotton Mill News

Arkwright Mills, Spartanburg, S. C., has recently expanded by adding 300 looms.

Caroleen Mills, Maiden, N. C., is progressing rapidly with $250,000 building and expansion program, which includes construction of two new buildings and addition of 50 more looms.

Dundee Mills, Griffin, Ga., is completing new dye plant and bleachery, and company has started installation of auxiliary equipment. New plant has open-width bleaching and jig and continuous dyeing replacing East Griffin plant. Continuous open-width bleaching process will be installed in present bleachery next to rope system.

Equinox Mill, Anderson, S. C., will start construction of new two-story building of 15,000 sq. ft. floor space in near future. Mill recently completed one-story storage building.

Highland Park Mfg. Co., Charlotte, and Rock Hill, S. C.; **Johnson Mfg. Co.,** Selma, N. C.; **Monroe Mills Co.,** Monroe, N. C.; **Park Yarn Mills Co.,** Kings Mountain, N. C.; **Worth Spinning Co.,** Stony Point, N. C.; **Spinners Processing Co.,** Spindale, N. C.; and **Roberta Mfg. Co.,** and **Brown Mfg. Co.,** Concord, N. C., units of Johnson chain of textile mills, will be completely modernized at cost of $5,000,000.

Howard-Arthur Mfg. Co., Fall River, Mass., sustained fire loss recently, reported at $100,000. It is planned to rebuild.

Icard Cordage Mfg. Co., Icard, N. C., owned by Sampson Cordage Works, Boston, Mass., is to build addition to its present plant for braiding room.

International Braid Corp., Fall River, Mass., new company, has been formed; and stock is owned by Saul Ludwig and Harry Spinrad of New York, N. Y., who will be president and treasurer respectively. Company will manufacture venetian blind tape and cord. Machinery for new plant, to be operated in Old Barnard Mills, has been acquired from International Braid Co. of Providence, R. I.

Kontz Mfg. Co., Rome, Ga., has acquired spinning mill at Kinston, Ga., that will produce yarn to be used in manufacture of fringes, principally for tufted-bedspread industry.

Libertyville Textiles Inc., Libertyville, Ill., plans new one-story mill at Grayslake, Ill., 150x340 ft., to cost over $150,000. Ganster & Hennighausen, Waukegan, Ill., is architect.

Manetta Mills, Lando, S. C., has modernization program under way and has installed new opening-room machinery. In September, mills will install new long-draft spinning machinery.

Newberry Textile Mills, Newberry, S. C., now undergoing extensive modernization and rehabilitation, plans to speed up work in order that it may be finished within three months. Plans are to stop immediately operation of all outmoded looms, and to change over to Draper looms within 90 days. Shift is being made from manufacture of sheeting to fine print cloths. Mill has to date spent $1,200,000 on program.

Charles Peberdy & Son, Philadelphia, Pa., has let contract to Laub Construction Co., Philadelphia, for two-story adition, about 95x105 ft., reported to cost over $100,000, with equipment.

Profile Cotton Mills, Jacksonville, Ala., is adding 7,000 spindles.

Powdrell & Alexander, Inc. will open branch plant in Los Angeles, Cal. E. C. Powdrell

BARBER COLMAN

MOTOR-OPERATED VALVES, THERMOSTATS *and* HUMIDISTATS

Reduce Mill Operating Costs

You can reduce waste, save time, and improve efficiency by installing Barber-Colman automatic controls on heating, cooling, or humidifying systems, and on processing operations. The units shown here are typical of the many available for combination into specially engineered systems that will maintain automatically the desired uniform conditions. Barber-Colman Valves are shipped *completely assembled* ready for piping and electrical connections. Barber-Colman Company has been serving the textile industries for 45 years. Your Barber-Colman representative is qualified, by training and experience, to assisit you in the selection of suitable controls.

BARBER-COLMAN COMPANY

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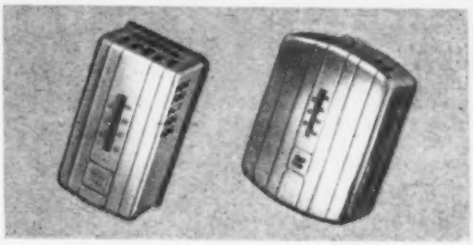

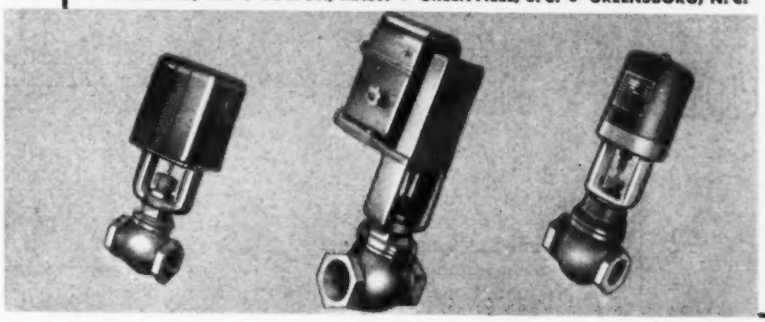

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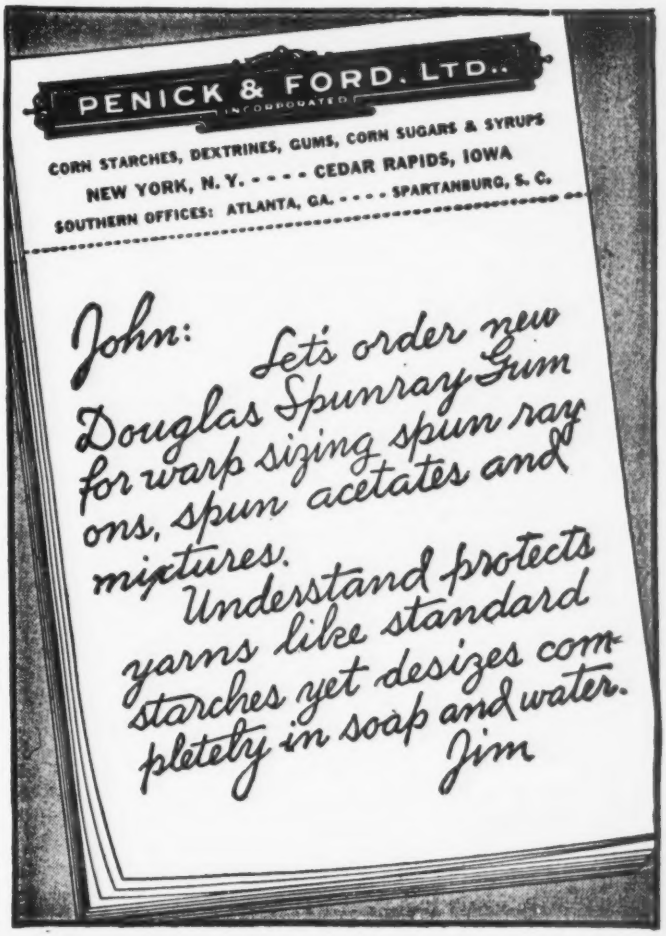
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NEWS ABOUT *Mills* (Continued)

has concluded negotiations for plant having 35,000 sq. ft. of floor space to be used for curtain production. Operations will begin in September. Company has other units in Springfield, Mass., and Charlotte, N. C. Jack Margolin will be manager of new plant; and Vernon Perry, his assistant.

Springs Cotton Mills, with plants at Chester, S. C., Lancaster, S. C., Fort Mill, S. C., and Kershaw, S. C., will have all of plants air-conditioned.

Startex Mills, Tucapau, S. C., has completed addition to finishing plant, and is now rearranging machinery and equipment, and adding additional equipment to provide for straight-line production.

Stonewall Cotton Mills, Meridian, Miss., recently purchased by Erwin Cotton Mills Co., Durham, N. C., now has improvement program going forward. New machinery will be installed as rapidly as possible, but without interrupting normal operations too greatly. New flooring is being laid, and improved ventilation added.

Utica & Mohawk Cotton Mills, Inc., Seneca, S. C., has completed addition to mill adding 35,000 sq. ft. of floor space, and is installing new intermediate frames and new pickers, increasing number of spindles from 40,000 to 77,000, and adding 200 new XL 90 in. looms. Two new slashers have also been added in expansion program.

Victoria Mills, Rock Hill, S. C., is completing addition that will be 30x90 ft. Company is also making numerous repairs to mill buildings and warehouse.

Wool Mill News

American Textile Woolen Co., Sweetwater, Tenn., has been sold to Shade Murray, of Nashville, who plans to start operations as soon as sales organization can be perfected. Mill has been closed for last 13 mo., and formerly employed about 450 persons.

Associated Spinners, Inc., Gastonia, N. C., plans expansion program, and has purchased additional frontage adjoining present plant for purpose. Plant was recently established in Gastonia, and manufactures worsted yarn on new system.

Bigelow-Sanford Carpet Co., Thompsonville, Conn., has $6,000,000 plant-modernization and additional-working-capital program under way.

Brownwood, Tex.—Large unidentified eastern woolen-mill has signed contract for purchase of laundry building and six-acre tract of land in Camp Bowie warehouse area near here, for establishment of woolen mill. Plant will dye, comb, card, and weave cloth from Texas wool. Mill will be largest of kind in Texas, and will employ about 125 operatives.

Hollands, Ltd., Manchester, Eng., one of oldest worsted-yarn spinning firms in Great Britain, plans to open Canadian plant in Smiths Falls, Ont., before end of present year. Plans provide for one-story windowless plant with 25,000 sq. ft. of floor space.

Lafayette Worsted Spinning Mills, Woonsocket, R. I., has brick walls up for $100,000 mill addition on Hamlet Ave., from plans by Oliver W. Fontaine, 285 Main St., Woonsocket. Enterprise Building Co., 112 Gilbert St., has general contract.

Riverside Worsted Co., Woonsocket, R. I., will ship its out-of-date machinery to Melbourne, Australia, to equip Australian-formed company in which Riverside will have financial interest. New machinery is being installed at Riverside plant to take up slack, and result of deal is gain for all concerned. New company, River Hart Worsted, Ltd., will be formed in Australia, and Australian investors, who put up plant, land, and working capital, will hold slightly more than half of stock, while remainder will be owned by Riverside.

Star Mending Co., Holly St., Lawrence, Mass., recently been established, will do commission mending and burling of woolen and worsted fabrics, specializing in fine gabardine.

Swift River Woolen Co. is building boiler plant to house new equipment on Potter Hill, Westerly, R. I. Unit will be one-story, cinder-block structure, from plans by Thomas

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NEWS ABOUT *Mills* (Continued)

H. Willis, Washington Trust Bldg., Westerly.

Virginia Woolen Co. has formed subsidiary company, Varel Mills, Inc., with new plant at Middleway, W. Va., which is to serve as finishing department for parent firm. Varel is scheduled to go into production by first of year. H. B. McCormac, Jr., of Winchester, is president. Approximately 100 persons are to be employed at new plant.

Wanskuck Co., Providence, R. I., has power plant improvements and alterations underway. H. H. Fales, 10 Weybosset St., is engineer.

Synthetic Mill News

Beaunit Mills, Inc., Childersburg, Ala., and Beverly, N. J., will have new rayon mill, now in course of construction in Alabama, ready for service early in January. Plant will be equipped for capacity of about 10,000,000 lb. viscose filament yarn per annum, all of which will be used by parent company. Complete project will represent investment reported in excess of $15,000,000.

Belding Heminway Corticelli Co. has commissioned Leo F. Caproni, 1221 Chapel St., New Haven, Conn., to prepare plans for one-story textile mill in Bedford, Va. Mill will be air conditioned and provide 40,000 sq. ft. of floor space.

A. J. Barson, Inc., Roanoke, Va., has opened bids for construction of weaving-mill building to be constructed at Lavonia, Ga. Structure will house $500,000 industry when completed.

Canadian Industries Ltd., Kingston, Ont., has completed major expansion program at plant at cost of $4,500,000.

Celanese Corp. of America, Celriver unit, near Rock Hill, S. C., will probably begin production by end of this month. Initial employment at plant will be about 2,500 workers, and later this figure will reach about 5,000. Harmon Howorth is general manager of unit.

Cramerton Mills, division of Burlington Mills Corp., Cramerton, N. C., plans expansion for finishing yarn-dyed fabrics at cost of $200,000. Program, which includes addition of 8,000 sq. ft. to plant and installation of new machinery, will be completed and machinery will be in operation by end of year. Division's capacity for finishing yarn-dyed fabrics will be increased 100%.

Deering Milliken & Co., Inc., started weaving operations in August in new $4,000,000 rayon plant still under construction at Pendleton, S. C. Warp beams will be trucked from other plants until Pendleton mill is completed and slashers and other equipment have been installed.

Galax Weaving Co., Galax, Va., unit of Burlington Mills Corp., has completed construction of addition that doubles its size.

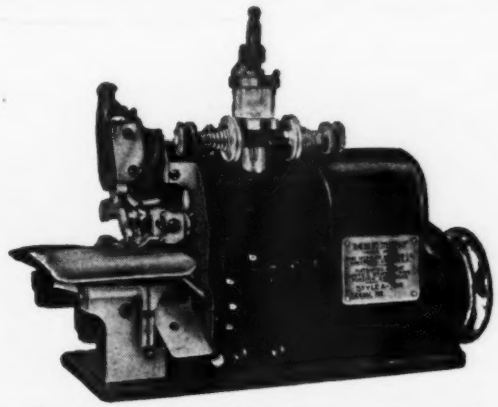
Gem Mills, Gibsonville, N. C., purchased during war by Burlington Mills Corp., Greensboro, N. C., has been sold to M. B. Smith, of Burlington, N. C.

Glass Fibers, Inc., Waterville, Ohio, is completing plans for two one-story additions, 41x300 ft., and 51x250 ft., to cost over $350,000, with equipment. Continental Industrial Engineers, Inc., 176 West Adams St., Chicago, Ill., is engineer.

Greenwood Mills, Greenwood, S. C., plans construction of new filament-rayon-weaving plant probably located about three miles northwest of Greenwood. New plant is estimated to cost $3,000,000 to $4,000,000, and is expected to give employment to more than 1,000. J. A. McPherson Co., Greenville, S. C. will do engineering work.

Lancaster Weaving Mills, Ltd., with head office in Kitchener, Ont., was recently granted charter by Ontario Government. Capitalization is $100,000, and it is understood that company will erect plant in Kitchener for manufacture of upholstery fabrics.

Laurel Hill Corp., Rutherfordton, N. C., new company, has begun to excavate for foundations of plant where rayon fabrics are to be manufactured. Building will be



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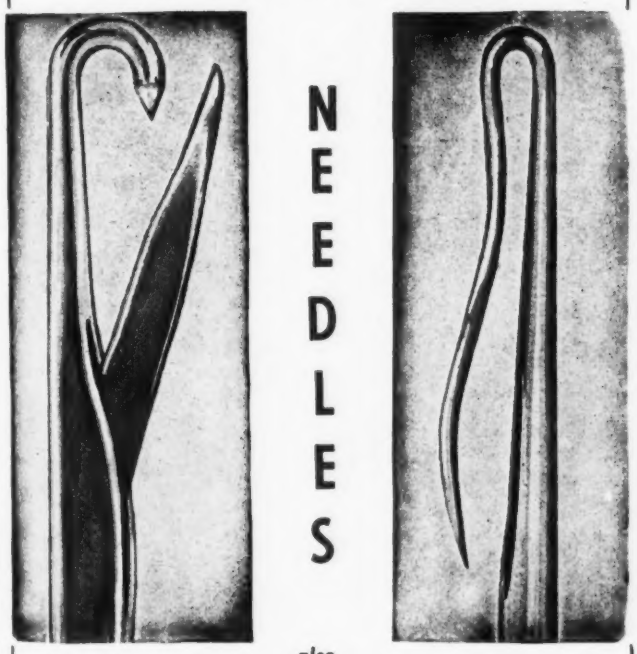

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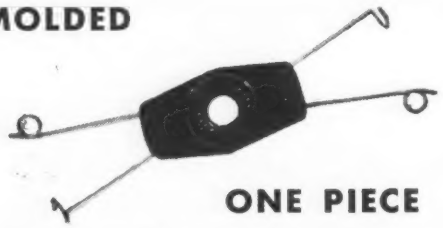

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NEWS ABOUT *Mills* (Continued)

150x300 ft., of steel and concrete block; and will be completely air conditioned. Concern recently purchased 32 acres for purpose. Laurel Hill Corp. is owned by New York interests.

Lincoln Spinning Co., Pawtucket, R. I., recently organized, has borrowed $250,000 from William Heller & Co., of New York. Benjamin M. McLyman, organizer of firm, stated that funds would be used for machinery and materials in preparation for opening plant this fall. Imported textile machinery is reported to be on its way to mill.

Nitro Chimica Brasileria, San Miguel, Brazil, will put new $18,000,000 viscose-process rayon yarn plant in operation in near future. Plant will have capacity of 20 tons per day. Ermirio de Moraes is directing head of company.

Roanoke Weaving Co., unit of Burlington Mills Corp., at Roanoke, Va., has completed weaving-expansion program. New weave room was constructed, with newest type of Draper looms installed. Air conditioning, fluorescent lighting, and dining rooms for the operatives were added.

Robbins Cloth Mills, Inc., is scheduled to begin installation of machinery at new mill in Aberdeen, N. C., during July. New mill will have 19,200 spinning spindles, and 192 looms; and will manufacture 60-in. rayon suiting for men and women. Operations are getting under way on limited scale.

Shiraz Mfg. Co., Ltd., Iran, is to have equipment supplied by H & B American Machine Co., Pawtucket, R. I. Contract, valued at $750,000, calls for supplying 11,952 spindles, as well as humidification equipment, power plant, and plant layout. Delivery of machinery is to be made in first and second quarters of 1949.

Towne Processing Co., Church Lane and Lena St., Philadelphia, Pa., is engaged in commission twisting. Company also makes novelty sales yarns. Ulysses Tremblay operates plant.

Walhalla, S. C. — Business interests here have pledged approximately $25,000 in effort to attract yarn-processing plant seeking location here.

Knitting Mill News

Atwater Hosiery Co., Yanceyville, N. C.—Casswell Development Co. has asked for bids on construction of plant to be leased to Atwater Hosiery Co., which was recently organized and chartered. Building will measure about 69x132 ft. and will contain nearly 10,000 sq. ft. of floor space.

Burlington Mills Corp., Greensboro, N. C., has acquired $12,000,000 May McEwen Kaiser Co. Directors and stockholders have approved revised plan of sale that transfers assets, properties, business, and goodwill subject to liabilities, from May to Burlington for 608,000 shares of Burlington common stock. Herbert M. Kaiser will become vice president and director of Burlington organization.

Chalmers Knitting Co., Amsterdam, N. Y., has started to produce yarn at new addition, with expected weekly capacity of 30,000 lb. of combed yarn.

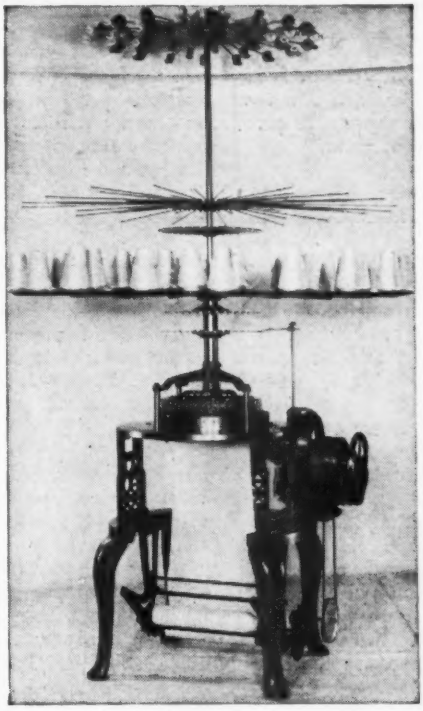
Classon Knitting Mills, Ltd., 44 Wellington St., S., Sherbrooke, Que., has let contract for erection of one-story mill building, 80x240 ft., of brick and concrete-block construction with steel frame. Cost is estimated at $90,000.

Consolidated Hosiery Mill, Inc., Marion, N. C., is new name for Hensley and McCurry Hosiery Mills, which have merged.

Douglas Knitting Mills, Reading, Pa., newly organized, is equipping large building at Douglas and Moss Sts. for children's hosiery. John D. Horst, Jr., whose father is superintendent of Nolde & Horst Co., is head of new enterprise.

Eureka Knitwear Mills, Inc., Hickory, N. C., newly chartered, will manufacture and sew jersey knit cloth at plant in West Hickory.

Gotham Hosiery Co., Philadelphia, Pa., plans 4-story addition, about 90x115 ft., reported to cost over $200,000. Savery, Scheetz & Gilmour, 1500 Walnut St., is architect.



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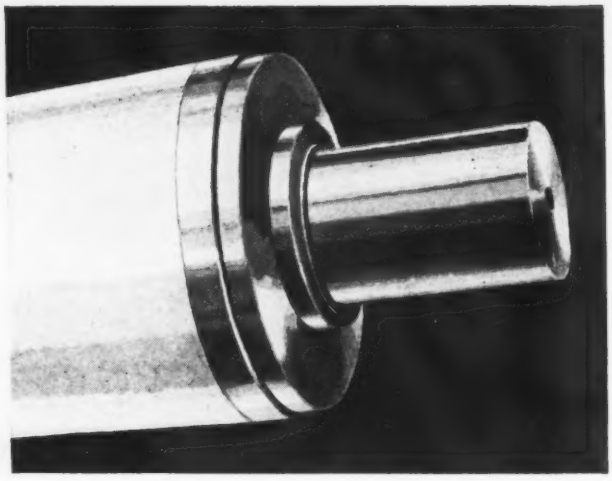

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NEWS ABOUT *Mills* (Continued)

Haltom Hosiery Mills, Inc., High Point, N. C., is now occupying larger quarters as part of expansion program.

Liberty Hosiery Mills, Inc., Burlington, N. C., has purchased old Gem Mill at Gibsonville, N. C., from Burlington Mills Corp., for future expansion purposes. Mill has approximately 35,000 sq. ft. of floor space, and was purchased by Burlington Mills during war for use as warehouse. In recent months, stocks have been gradually transferred elsewhere.

Nebel Knitting Co., Inc., Charlotte, N. C., is now installing additional machinery for production of 54-gage hosiery. This is part of expansion program that will increase plant capacity to three times present size.

Owen Osborne, Inc., Gainesville, Ga., is installing new air-conditioning system, constructing utility addition to mill, and replacing 20-section full-fashioned 42- and 45-gage equipment with 30-section 51-gage. Looping, seaming, examining, and mending departments will be moved to space formerly occupied by box factory to give mill straight-line production.

R & J Knitting Mills, 281-83 Liberty Ave., Brooklyn, N. Y., has taken out permit to make alterations and improvements in mill. J. E. Schnall, 44 Court St., Brooklyn, is architect.

Rosita Hosiery Co., 36 N. Third St., Philadelphia, Pa., has started manufacture of hosiery. Samuel Kahn is principal, and O. Schmittberger, general manager of new company.

Sanford Hosiery Mills, Inc., Sanford, N. C., has been chartered to manufacture hosiery. Maximum authorized capital stock is $100,000. Robert Folkman, Luther Aldridge, and Rupert Smith, all of Concord, N. C., are incorporators.

Signal Knitting Mills, Chattanooga, Tenn., plans erection of one-story addition.

Sumter Hosiery Mills, Sumter, S. C., has installed initial group of 30 Scott & Williams 220-needle color-in-color PW wrap machines in its $200,000 expansion program. Machines have been put into operation, and more are expected at mill. Mill has also installed 30 Banner wrap and reverse-plate machines.

David Stromberg, 387-93 South First St., Brooklyn, N. Y., has filed plans for alterations and improvements in knitting mill at location noted. Frank V. Laspia, 217 Havemeyer St., Brooklyn, is architect.

Taylor, Woods, Ltd., Ennis Kellen, Northern Ireland, subsidiary of York Knitting Mills, Ltd., Toronto, has been established and is employing 200 operatives for manufacture of 54-gage hosiery. Current plans call for construction of new and larger mill.

Worcester Knitting Co., Worcester, Mass., has purchased from Matthew P. Whittall two buildings at 10-16 Salem St., Worcester, for about $200,000. President and treasurer of company is Abraham S. Persky. Buildings are brick structures, and about 21,000 sq. ft. of land was included in sale.

Dyeing & Finishing Plant News

Allegheny Hosiery Finishing Co., Philadelphia, Pa., has moved to larger quarters at Trenton Ave. and Huntington St., Philadelphia.

E. I. du Pont de Nemours & Co., Inc., has opened laboratory for research and development work in field of coated fabrics and allied products at Newburgh, N. Y. Three-story laboratory will be directed by R. E. Thomas, and is part of chemical division of Du Pont's fabrics and finishes department.

Rock Hill Printing & Finishing Co., Rock Hill, S. C., is building 16-acre park with facilities for almost every form of recreation for operatives of plant.

XYZ Corp., Providence, R. I., has been chartered with incorporators consisting of Ralph P. Semenoff, Ann J. Martellini, and Ida Kaufman for purpose of dyeing, finishing, and bleaching wool and other textiles.

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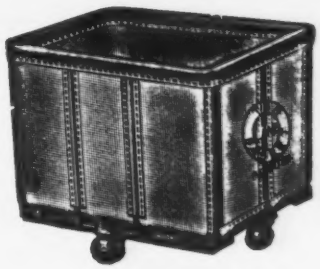

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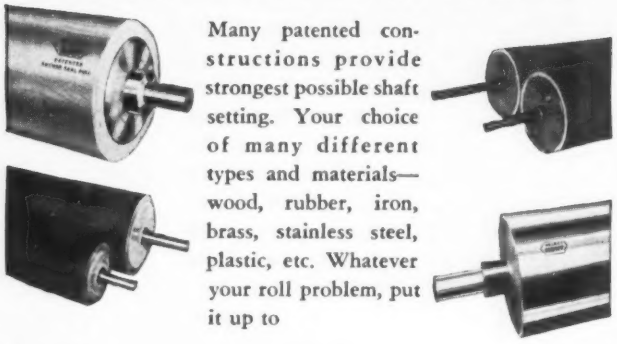

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NEWS ABOUT *Men*

Royal Little, president of Textron, Inc., has become president of Esmond Mills, Ltd., Granby, Que., following resignation of **Robert R. West** from that office. **Marshall Rawle** is now vice president, in place of **Boughton Cobb**; and **Charles H. Dyson**, president of Textron Incorporated and executive vice president of Textron, Inc., has become treasurer and director in place of **Gerald Whitman.**

Frederick A. Williams, former president of Cannon Mills, Inc., Kannapolis, N. C., left for Tokyo, Japan, recently, to begin his work of aiding General Douglas MacArthur on textile program for Japan.

Albert D. Annibale has become president of Normandie Finishing Co., Fairlawn, N. J., succeeding **Theodore Gerry**, resigned. Other officers are **Frank Mazza**, secretary, and **Peter Ricardo**, treasurer.

William S. Nutter, vice president of Goodall-Sanford, Inc., has retired after 50 yr. in service of Goodall companies.

Edwin L. Dale has resigned as vice president and sales manager of Sauquoit Silk Co., Inc., Sauquoit, N. Y., in order to devote more time to other interests. Mr. Dale has been associated with Sauquoit since 1941.

Warren L. Hadley has been named vice president in charge of production at Glen Raven Silk Mills, Inc., Altamahaw and Burnsville, N. C., and **Arthur Rogers** has been named vice president in charge of production of Glen Raven Knitting Mills, Inc. The former company now is completing construction of new plant at Burnsville which will be in production in fall.

William R. Beuret, vice president and general manager of Amoskeag-Lawrence Mills, Amory Worsted and Amoskeag Mills, Manchester, N. H., has resigned to become general manager of Lion Yarn Co., Manchester, N. H.

Robert S. Small, of Greenville, S. C., who has been serving as vice president and assistant treasurer of Otteray Textiles, Inc., Anderson, S. C., has been elected president and treasurer of company. He was named by board of directors to posts held by the late Harry J. Haynsworth.

E. B. Mathewson, executive vice president and director of North Star Woolen Mill Co., Minneapolis, Minn., has resigned. He will again become president of E. B. Mathewson Co., Chicago, Ill., a firm of management engineers.

Bert G. Gross, vice president and co-founder of Applikon, Inc., Paterson, N. J., has resigned from firm. His future plans are not known.

F. Sadler Love, secretary of the American Cotton Manufacturers Association, has been named executive assistant in charge of the organization's activities, being in charge of the association's offices in Charlotte, N. C., and Washington, D. C., according to an announcement by **Harvey W. Moore**, of Charlotte, chairman of the board, following the death of Dr. William P. Jacobs on July 25.

Sir Edward Peel, Peel Cotton Co., Alexandria, Egypt, sailed for England on July 29. He had been visiting **Robert W. Boys**, president of Green River Mills, Inc., Tuxedo, N. C., in company with **B. M. Jones** and **Robert Warden** of Jones, Gardner & Beal Co., Providence, R. I.

H. L. Porterfield, Jr., has been appointed director of public relations for Verney Corp., Boston, Mass., effective July 19. He was formerly assistant director of public relations for the Chesapeake & Ohio Railway, Cleveland, Ohio.

W. Francis FitzGerald has been appointed to the newly created position of assistant managing director of the Inter-

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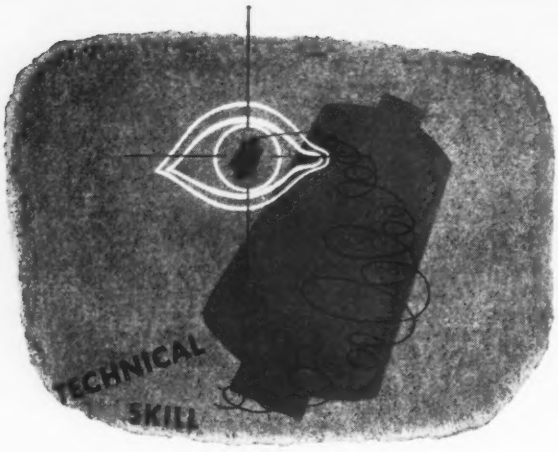

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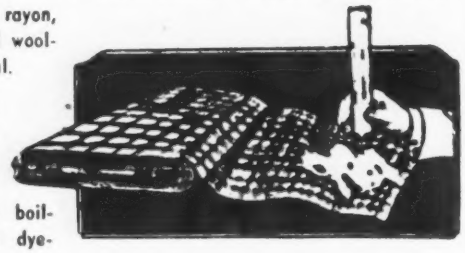

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NEWS ABOUT *Men* (Continued)

national Wool Secretariat, New York, N. Y. He was formerly assistant vice-president of the Emigrant Industrial Savings Bank, New York.

John Mueller, vice president of Nazareth Mills Div., has been appointed general superintendent of Julius Kayser & Co.'s United States manufacturing operations.

Siegfried F. Brand has become associated with Native Laces & Textiles, Inc., New York, N. Y., as technical assistant to production manager, **O. W. Hampton,** Knitted Fabrics Div., which includes all tricot fabrics. He recently resigned from Burlington Mills Corp., where he had been for last 2½ yr. as tricot-fabrics-development technician.

Walter E. Scholer has become manager of fabrics development department of American Viscose Corp., Marcus Hook, Pa. Mr. Scholer, who has been connected with the company since 1940, will succeed **Pierre Sillan.**

W. B. Thomas, superintendent of Richland plant, Columbia, S. C., division of Pacific Mills, has resigned to become general manager of Gold-Tex Fabric Corp., Rock Hill, S. C. He has been succeeded at Pacific Mills by **John Wengard,** formerly assistant superintendent.

John McArthur, formerly manager of Ernst & Ernst, certified public accountants, Winston-Salem, N. C., has joined executive staff of Erwin Cotton Mills, Durham, N. C.; and will assist officers of company in correlating all phases of company's activities, including finances, costs, purchasing, production, etc.

Arthur C. Young, Sr., former assistant director of standards with Bibb Mfg. Co., Macon, Ga., has become manager of standards for Newberry Textile Mills, Newberry, S. C.

F. W. Simpson, of Columbia, S. C., formerly connected with Atomic Energy Commission, Oak Ridge, Tenn., has become member of staff of Institute of Textile Technology at Charlottesville, Va.

Albert W. Craig, general manager of Windsor Print Works, North Adams, Mass., subsidiary of Consolidated Textile Corp., has resigned. His duties are being divided among other officers for present time.

Gardner Friedlander, who has been in charge of Phoenix Hosiery Co., Superior, Wis., has been transferred back to main office in Milwaukee. **Peter Scharay** will become local manager.

Robert Helfenbein, formerly production manager of upholstery and drapery department of Cohn-Hall-Marx Co., has been appointed to direct manufacturing and mill operations of Golding Bros. Co., Inc., New York, N. Y.

Robert S. Laird has joined staff of throwing division of Martin Fabrics Corp., plant at Bethlehem, Pa., as industrial engineer.

W. P. Nicholson, of Easley, S. C., is newly appointed superintendent of Glenwood Cotton Mills, Easley, succeeding **M. E. Garrison,** who resigned after 45 yr. of continuous service with company. Mr. Nicholson has been overseer of card room of same mill.

Dan Leister has become superintendent of Aragon-Baldwin Mills plant at Rock Hill, S. C., succeeding **T. B. Moore.** Mr. Leister was superintendent of plant of Dunean Mills at Greenville, S. C., prior to assuming new duties at Rock Hill.

J. T. Byrum, who has been superintendent of Tolar-Hart & Holt Mills, Fayetteville, N. C., has been transferred to No. 2 plant of Harden Mfg. Co., Rock Hill, S. C., succeeding **George Rutledge,** who has been transferred to Harden Mfg. Co., No. 1 plant, Dallas, N. C.

J. T. Marshall, assistant superintendent of Peck Mfg. Co., Warrenton, N. C., has been promoted to superintendent, succeeding **Roy Dixon,** who has been made superintendent of Tolar-Hart & Holt Mills, Fayetteville, N. C.

Roy Turner, formerly assistant overseer of weaving at Beaumont Mfg. Co., Spartanburg, S. C., has been promoted to night overseer. **P. L. Moody,** first-shift second hand of weav-

ing has been promoted to assistant overseer of weaving. Mr. Turner succeeds **P. L. Piercy,** who resigned to become assistant superintendent of Clover Spinning Mills, Inc., Clover, S. C.

J. Walmsley, overseer of weaving of Bates Mfg. Co., Lewiston, Me., has been promoted to superintendent. He succeeds **P. D. Emery,** who has been promoted to agent of mill.

J. J. Warnke has resigned as manager of Neponset Woolen Mills, Canton, Mass.

John W. Arnall, formerly general foreman of finishing mill of Fieldcrest Mills, Spray, N. C., has been named assistant superintendent of plant. **Roy Martin** and **William Brown,** formerly loomfixers, have been promoted to assistant foremen of Fieldcrest's rayon-mill weave room.

Claude A. Bransford has resigned as assistant superintendent for Albany Felt Co., Monmouth, Me.

H. O. Chapman, former superintendent of Utica & Mohawk Cotton Mills, Inc., Utica, N. Y., has been appointed manager of company's mill at Seneca, S. C., to succeed **J. B. Humbert,** who has retired after quarter century with company.

William Deady has become overseer of dyeing for Cowan & Swain, Haverhill, Mass.

Carl Fennoccio has become overseer of dyeing for Cohoes Dyeing & Finishing Co., Cohoes, N. Y.

M. E. Garrison, who has served as superintendent of Glenwood Cotton Mills, Easley, S. C., since 1905, has retired.

Horace Perry, recently overseer of frame spinning for Barbour Mills, Brockton, Mass., has become associated with Whitin Machine Works, Whitinsville, Mass.

David G. Roberts has become overseer of worsted yarns at Corriedale Mills, Moosup, Conn.

Peter Johnson has become overseer of carding at Yantic Woolen Mills, Yantic, Conn.

Otto J. Lang, superintendent of Gramil Weaving Corp., Clifton, N. J., has been elected vice president of corporation. Corporation plans erection of new mill in eastern Pennsylvania area.

Louis Maloof has become superintendent of Fall River Weaving Mills, Fall River, Mass.

H. P. Pearson succeeds **Frank Adams** as assistant superintendent of Baltic Mills, unit of American Woolen Co., Enfield, N. H. Mr. Adams was transferred to Mascoma Mills, American Woolen Co., Lebanon, N. H.

F. D. Porter, assistant superintendent of plant of Jackson Mills, at Iva, S. C., has been promoted to superintendent of company's plant at Wellford, S. C., succeeding **M. Cottingham,** who has resigned.

Sidney L. Cox, of Spray, N. C., has become overseer of mending and burling at plant of M. T. Stevens & Sons Co., Rockingham, N. C.

John Feenstra, overseer of finishing at Hayward & Schuster Woolen Mills, East Douglas, Mass., has resigned. He has been succeeded by **George Wood.**

Joseph G. Mimini, formerly with H. T. Hayward Co., Manchaug, Mass., is now overseer of dyeing at Buckley & Mann, City Mills, Mass.

W. P. Nicholson has been named superintendent of Glenwood Cotton Mills, Easley, S. C. He succeeds **M. E. Garison,** retired.

Anthony Stefanski has become acting overseer of finishing at National Felt Co., Easthampton, Mass., succeeding **E. R. Beaulieu,** resigned.

Harold Thompson has become superintendent of Watt Woolen Mills, Norristown, Pa. He was formerly on the road for Union Color & Chemical Co.

Herman Oliver is now overseer of weaving, and **Alfred Paquette** has been made foreman of weaving on second

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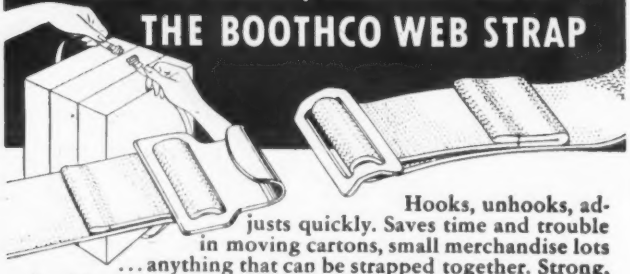

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NEWS ABOUT *Men* (Continued)

shift, at Hadley Mills, Holyoke, Mass. Mr. Oliver was formerly with Androscoggin Mills, Lewiston, Maine. Mr. Paquette has been with Lynn Textile Co., Holyoke, Mass.

OBITUARY

Dr. William P. Jacobs, 54, president of American Cotton Manufacturers Association, Charlotte, N. C., died July 25. Dr. Jacobs first became associated with the textile industry in 1932 when he was named secretary-treasurer of the Cotton Manufacturers Association of South Carolina. He held this office until 1939 and then served as executive vice president and treasurer until 1944. He was also president of Jacobs Press, Clinton, S. C. and had been associated with Jacobs & Co., a Clinton advertising firm, since 1914. He was previously president of the Presbyterian College at Clinton.

Nathaniel F. Ayer, 70, retired New England cotton manufacturer, died in New Brunswick on July 24. Since being graduated from Harvard College in 1900, he had been president, treasurer and director of many mills in New England. Among those with which he had been associated were the Farwell Mills & Bleachery, Lawrence, Mass.; Nyanza Mills, Woonsocket, R. I.; Cabot Mfg. Co., Brunswick, Me.; Lancaster Mills, Clinton, Mass.; Fairhaven Mills, New Bedford, Mass., and Lawton Mills, Plainfield, Conn.

Eugene Holt, 73, of Richmond, Va., one of the founders of Burlington Mills, Burlington, N. C., died recently. He had been a director of Burlington for a number of years and was at one time with Lawrence S. Holt & Sons at Burlington.

Frank C. Morin, 62, Laconia, N. H., president and superintendent of Belknap Mills Corp., died June 21. Mr. Morin was in the hosiery business 44 yr. beginning in the mill founded by his father, the late Joseph Morin.

John W. Pearson, 91, founder of Salt's Textile Co., Bridgeport, Conn., died July 19 in Monmouth Beach, N. J. Mr. Pearson established the plush manufacturing industry in this country in 1888. At the time of his death he was president of the Pearson Co., Nutley, N. J.

Abram Trimble Eastwick, 83, a director since 1894 and former president of James Lees & Sons Co., Norristown, Pa., died July 12.

Max Yankauer, 82, chairman of the board of Mill Factors Corp., New York, died recently. Mr. Yankauer, one of the co-founders of Mill Factors Corp., had been president of the company for some time previous to becoming chairman of the board 6 yr. ago.

Morris M. Bryan, Sr., president of Jefferson Mills, Jefferson and Crawford, Ga., died recently, after being associated with the textile industry for 32 yr.

John C. Neumann, owner of Olga Knitting Mills, Inc., Watertown, N. Y., was killed in an automobile accident near Prague, Czechoslovakia, recently, while visiting that country.

Joseph C. Pratt died June 30 in Jenkintown, Pa. He was the founder and president of Leonard C. Pratt Co., Inc., Philadelphia, Pa. He retired a few years ago. He was at one time associated with A. J. Cameron & Co., Philadelphia, and Montgomery Worsted Co., Norristown, Pa.

Hugo Huettig, founder and president of the former Huettig Silk Hosiery Co., Paterson, N. J., died July 20.

Harry Friedman, 42, head of Sir Harfrey Hosiery Co., Philadelphia, Pa., died recently. Before founding his own business in 1940, he was a partner in Good & Friedman, and later was with Fisher & Ehrlich and S. Miller Hosiery Co.

George W. Dolan, 46, chairman of the board of Mathieson Chemical Corp., N. Y., died July 24. He became associated with Mathieson in 1930, was elected presi-

NEWS ABOUT *Men* (Continued)

dent in 1944, and chairman of the board this year.

William Pinckney Hamrick, 77, retired general superintendent of Pacific Mills, Columbia, S. C., died July 8. A native of Forest City, N. C., Mr. Hamrick went to work in a cotton mill at the age of 14. In 1900 he went to Columbia to become an overseer in Granby Mills. In 1904, Mr. Hamrick was promoted to superintendent of Granby Mills and also Olympia Mill, another in the Whaley chain. Later he became general superintendent of all four of the Pacific Mills plants in Columbia, a position he continued to hold until his retirement in 1941.

Col. Edward G. Fletcher, 57, former vice president and assistant treasurer of Thies Dyeing Mills, Inc., West Warwick, R. I., died July 22.

William W. Crews, vice president of Comer-Avondale Mills, Sylacauga, Ala., with offices at Chattanooga, Tenn., died recently.

George O. Boelker, 64, vice president of Utrecht & Kendrick Fabric Mfg. Co., New York, died July 21. He had been vice president and sales manager of the Everlastik, Inc., Chelsea, Mass. before joining the New York firm.

Bernard L. Mock, 62, vice president of Mojud Hosiery Co., and a founder of its predecessor, Mock, Judson, Voehringer, Inc., died July 2, at his home in Beverly Hills, Cal.

Harry M. Rhett, 74, treasurer and general manager of Dallas Cotton Mills, Huntsville, Ala., died July 7.

Paul F. Quinlan, formerly secretary and treasurer of Colonial Knitting Mills, Philadelphia, Pa., died July 8. He retired some years ago.

Walter A. Conklin, general manager of Pentagon Hosiery Mills, Reading, Pa. died July 11. He was secretary of the Keystone Hosiery Mfrs. Assn.

Albert F. Fessenden, 81, died June 1. He was prominently identified with the cotton textile industry in Lowell, Mass. He had been associated with the Hamilton Co. and Bigelow-Hartford Carpet Co.

William Edwin Hendrick, 47, secretary and treasurer of Alabama Mills, Inc., Birmingham, Ala., died recently.

Emanuel Kaplan, 60, Norwich, Conn., textile manufacturer who had been reported missing on a plane trip was identified and his body recovered July 16. He was associated with B. D. Kaplan & Co., New York.

W. H. Dennett, who retired as superintendent of the textile mill at Iowa State Penitentiary, Fort Madison, Iowa, died at Mount Hermon, Mass., on June 13.

James H. McInerney, 72, sales manager of Manhattan Print Works Div., of Waldrich Co., Delawanna, N. J., died July 17.

Jesse L. Williams, 80, former superintendent of the Old Pine Tree Cotton Mill, now Wateree Mill, Camden, S. C., died July 26.

McClellan J. Seagel, 84, active in textiles for many years, died July 26 in Clinton, N. Y. He served as superintendent of Utica Knitting Co. plant in Oriskany Falls; of Rome Knitting Mill, Rome; and of Olympic Mill, New Hartford. He was head of the finishing department of Clinton Knitting Co. in recent years.

William Harold Gibson, 63, superintendent of Martha Mills, Thomaston, Ga., died recently.

Harry Lee Cornelius, Sr., 59, retired purchasing agent of Celanese Corp. of America, Cumberland, Md., is dead.

Wm. A. Nicholas, 66, former superintendent of the Dundas and Stormont Mills of Canadian Cottons Ltd., died recently at Cornwall, Ont. Born in Providence, R. I., he went to Canada 43 yr. ago.

Joseph J. Solodyna, superintendent of dyeing for Putnam Woolen Co., Putnam, Conn., died recently. He was at one time associated with the former Schilton Woolen Co., Webster, Mass.

Thebes Farthing, 70, Mayfield, Ky., an official of the old Mayfield Woolen Mills for many years, died recently.

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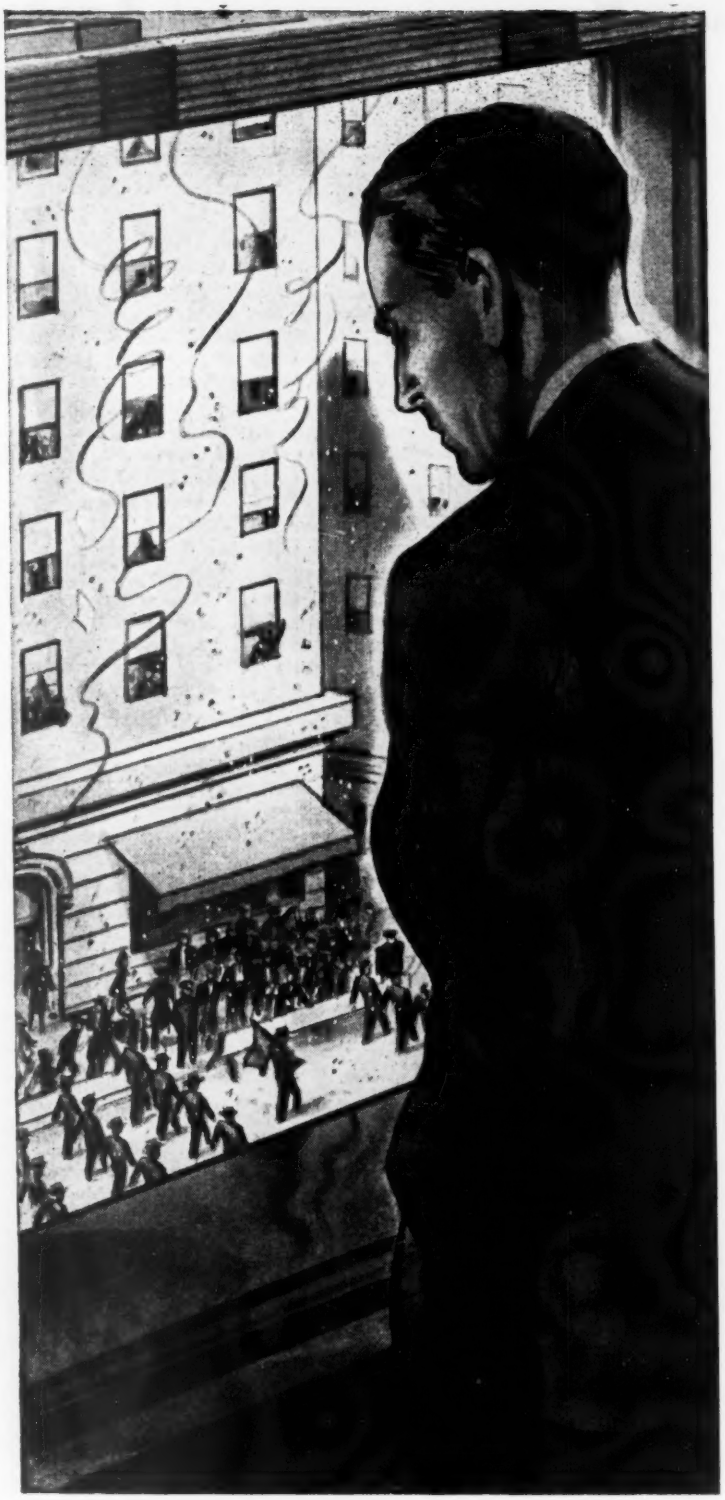

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Though the formal spring campaign to sell Bonds is over, any company can still move forward with the parade. Right now thousands of companies are putting *additional push* behind their Payroll Savings Plans. Managements of many companies that have not yet participated are *now installing* the Plan.

It's a "look-ahead" plan, that benefits employee, company, and nation. Every $3 invested in Bonds pay $4 at maturity. Personnel records in the plants with active P.S.P. programs show improved employee attitudes—evidenced by less absenteeism and fewer accidents—as the individual's sense of security grows with Bond purchases. And every Security Bond dollar built up in the Treasury retires a dollar of the national debt that is potentially inflationary. It means less bidding-up of prices. Moreover, Bond buyers are better citizens because they have a tangible stake in the nation's future.

It's just as easy to take action now as when the campaign was at its height. Just call your Treasury Department's State Director, Savings Bonds Division, and ask for the material that helps to get a Payroll Plan started or to keep it rolling.

The Treasury Department acknowledges with appreciation the publication of this message by

TEXTILE WORLD

This is an official U. S. Treasury advertisement prepared under the auspices of the Treasury Department and the Advertising Council.

SEARCHLIGHT SECTION

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

90 cents per line, minimum 4 lines. To figure advanced payment count 5 average words as a line.

POSITIONS WANTED (full or part-time salaried employment only), ½ above rates.

PROPOSALS, 90 cents a line an insertion.

INFORMATION:

BOX NUMBERS care of publication New York, Chicago or San Francisco offices count as 1 line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

DISPLAYED RATE:

The advertising rate is $8.00 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches —to a page. T.W.

NEW ADVERTISEMENTS received by 10 A. M. September 17th will appear in the October issue, subject to limitation of space available.

ENGINEERING EXECUTIVE

Textile Machinery

Old established textile machinery firm is looking for an engineering executive to take charge of a group of engineers and draftsmen designing cotton textile machinery, opening through spinning and twisting.

Prefer college engineering graduate with at least 15 years experience in the trade and thorough knowledge of machinery involved. If you are interested write giving complete details of experience including references and minimum salary requirements.

P-6027, Textile World
330 West 42nd Street, New York 18, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (18)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

WANTED—RECENT textile school graduate majoring chemistry. Location Chicago area. P-5982, Textile World.

WANTED: ASSISTANT Foreman, with underwear or hosiery knitting experience. Thirty miles from New York City. Starting salary $2622.00 which includes $342.00 emergency increment with an annual increase of $120.00 P-6149, Textile World.

RAYON WEAVING mill in Tennessee has opening for competent loomfixer on the night shift. He must be thoroughly experienced with C & K looms, both automatic and non-automatic. State experience and background in your first reply. Your application will be kept in strict confidence. P-6084, Textile World.

WANTED: BOIL-OFF Supervisor. Dyeing and finishing plant in southern location has opening for experienced boil-off supervisor. Technical education desirable. Excellent opportunity for right man. If interested, write P-6020, Textile World.

WANTED: DYEING and Finishing Plant in southern location has opening for experienced finisher. Must be experienced in finishing synthetics and all types of mixed fibers Technical education desirable. Excellent opportunity for right man. If interested, write P-6021, Textile World.

WANTED EXPERIENCED man to manage small printing plant with one four-color machine just starting up. Address reply to P-5983, Textile World.

TEXTILE CHEMIST—Research and development work in well-established Northeastern New York concern. Dyeing and processing experience on natural and synthetic fibers preferred. In replying stage age, training, experience, and give references. P-6116, Textile World.

SELLING OPPORTUNITY OFFERED

SALESMAN SEEKING—an additional line are offered quick selling item used by silk, rayon and cotton yarn manufacturers. Regular repeat orders possible. Some acquaintance needed with winding and throwing operations. Broad contact in field desirable. RW-6142. Textile World.

EMPLOYMENT SERVICE

WANTED: 2 Master Mechanics, second hand woolen finishing asstt. designer woolen mill. Apply to Tom Byron Employment Service, 703 Union St., Hudson, N. Y.

ADDITIONAL EMPLOYMENT ADVERTISING ON PAGE 362

WANTED

WEAVING SUPERINTENDENT

For 300-Box Loom Plant in Eastern Pennsylvania weaving high grade silk and synthetic fabrics. Thorough knowledge of automatic looms and preparatory machinery essential. Splendid opportunity for experienced man capable of producing quality merchandise.

Living Quarters Available

P-5673, Textile World
330 W. 42nd St., New York 18, N. Y.

FINISHER WANTED

Woolen and worsted mill of high grade fabrics, manufacturing broadcloth and suedes, wants a first class finisher. A man with highest reputation, and outstanding knowledge. Salary up to $15,000 annually. Write stating present and past experience, age, etc.

P-5585, Textile World
330 West 42nd St., New York 18, N. Y.

SUPERINTENDENT WANTED

Woolen mill, manufacturing fine quality goods, broadcloth, suedes, would like to get a top notch man, experienced in every phase of manufacturing and finishing. A man capable of assuming great responsibilities. Salary no object. Write stating education, present and past experience.

P-5586, Textile World
330 West 42nd Street, New York 18, N. Y.

OVERSEER—FINISH PERCHING

Large worsted manufacturer seeking Overseer with at least five years of Finishing Department experience, including Finish Perching. Prefer man at least thirty-five years old with some previous supervisory experience and pleasant personality.

Write **P-6122,** Textile World
330 W. 42nd St., New York 18, N. Y.

WANTED

A Qualified Woolcomber

who is able to teach wool combing. Please set forth in letter background and salary expected. A house is available to the successful applicant.

P-6153, Textile World
330 W. 42nd Street, New York 18, N. Y.

MEN WANTED

POSITIONS OPEN

Superintendents and assistant superintendents worsted yarn mills, French and Bradford Systems; chief draftsman large textile machinery firm; rayon converter New York City; woolen yarn and cloth mill superintendents and assistant superintendents; office manager bleachery $100. wk; superintendent dyeing, finishing and printing plant; managers, superintendents and assistant superintendents rayon cloth mills; thread salesman; superintendent cotton mill also superintendent finishing, dyeing and mercerizing for So. America; superintendent new textile mill So. States, preferably with mechanical engineering education; cost accountant $7,500; textile school instructor for designing; assistant superintendent garnetting plant.

Overseer for following departments: rayon skein and piece dyeing, woolen mule and frame spinning, finishing for woolen, worsted, cotton and rayon fabrics; final examining worsteds and woolens; fur hat dyeing; cotton piece goods dyeing; woolen and cotton carding, dyeing acetate, rayon and nylon tricot fabrics; cotton cloth room; dyeing and bleaching underwear; garnetting and carding 2nd shift; cotton and rayon weaving; corduroy finishing, warp preparation rayon and cotton slashers and Barber Colman High Speed slashers and warpers.

Industrial engineers and timestudy men; salesmen acquainted with mills in Maine and New Hampshire; assistant colorist or color shop foreman; salesman for dyestuffs, machinery, supplies, etc., with or without previous selling experience; master mechanics, also assistant master mechanics and plant engineers; full fashioned hosiery fixer $6,000-$8,000 year.

Second hands for following departments: woolen spinning; woolen and cotton carding; rayon, wool and worsted weaving; cotton and woolen carding; woolen and worsted finishing preferably with commission finishing plant experience; cotton carding, spinning, spooling, warping, drawing-in large Southern mill $350. month for each position.

Pile fabric loom fixer and weaver; fixer and operator underwear knitting machines; woolen mill fuller; fixers seamless and full-fashioned hosiery machines; mule fixers; woolen card fixer; cotton card grinder; jacquard loom fixer; cotton slasher tender $65; lace warper tender; sewing machine fixer; hat whittler or moulder; woolen shear tenders and many others.

CHARLES P. RAYMOND SERVICE
(Incorporated)
294 Washington St. Boston 8, Mass.
Liberty 2-6547

EXECUTIVE POSITION

Wanted an experienced man to fill the position of Superintendent of a small, newly constructed continuous filament rayon weaving plant located in Machias, Maine.

The equipment will include XD Draper looms and high speed cotton system warp preparatory machinery.

Address all interested inquiries to the:

Industrial Relations Dept.
NEWMARKET MFG. CO.
246 Market St. Lowell, Mass.

Please furnish complete experience history together with complete references and expected starting salary.

RAYON DYE HOUSE SUPERINTENDENT

for plant that does 2,000,000 yds. monthly, of filament, spun and plied yarns. Owned and operated by vertically integrated organization. Excellent opportunity for advancement. All replies held in strict confidence.

P-6156, Textile World
330 West 42nd St., New York 18, N. Y.

WANTED
Commission Carbonizing
CONTACT
Dartmouth Woolen Mills, Inc.
CLAREMONT, N. H.

WANTED
FACTORY SUPERINTENDENT

Textile dyeing and printing plant in metropolitan area.

Must be experienced in all phases of acetate and rayon dyeing, printing and finishing.

This is a life time opportunity for a man with proven experience in the field.

State experience, previous accomplishments, etc.

Replies will be held in strict confidence.

P-6126, Textile Word
330 W. 42nd St., New York 18, N. Y.

Commission Weaving
WANTED
On Plain Cotton Velours

Capacity 5000 yards per week
Plants nearby New York

Prepared to make immediate contact.

Box 358, Realservice
110 W. 34th St., N. Y.

WANTED

Large engineering firm wishes to acquire several complete textile plants through purchase of (1) capital stock, (2) assets, (3) machinery and equipment, whole or in part. Personnel retained where possible, strictest confidence.

Box 1222
1474 Broadway New York 18, N. Y.

DYER WANTED

Large worsted manufacturer wants qualified mens wear Dyer experienced in dyeing of piece goods, civilian, worsteds, woolens and governments. Write

P-6123, Textile World
330 W. 42nd St., New York 18, N. Y.

EXPORT TO HOLLAND

Makers of Textile machines and accessories who want to export to Holland, write to:

FIRMA A. J. HUITINK & ZN
Enschede, (Holland)
And you will have success.

FOR SALE
MANUFACTURING PLANT

In Carlisle, Pa. approximately 40,000 sq. ft. Excellent condition. Brick construction. Fully sprinklered. Ideal location in town. Immediate occupancy.

BO-6174, Textile World
330 West 42nd Street, New York 18, N. Y.

GENERAL MANAGER

Fine record as superintendent and production manager with well known firms, open for an interesting proposition.

PW-6169, Textile World
330 West 42nd Street, New York 18, N. Y.

FOR SALE
Medium Size Throwing Plant

In Patton, Pa. Complete with all equipment running. Brick construction with sprinkler system.

BO-6173, Textile World
330 West 42nd Street, New York 18, N. Y.

SUPERINTENDENT

Wide experience, silk and rayon, plain and Jacquard, good handler of help anywhere, progressive and uptodate. References.

PW-6168, Textile World
330 West 42nd St., New York 18, N. Y.

Don't look for A NEEDLE . . . IN A HAYSTACK!

Why?

Because needles and hay are seldom found in the same place. We should look for things where we have a right to expect to find them . . . that's why employers and employees, buyers and sellers, in the Textile field, look for Textile men, mills and used equipment in the Searchlight Section of Textile World. Advertising rates are low. Reader-interest is high.

Classified Advertising Division
TEXTILE WORLD
NEW YORK 18, N. Y.

POSITIONS WANTED

HIGHLY EXPERIENCED rayon and silk throwster; very capable in training new help. Can produce high quality yarns with maximum production, at low cost—desires connection with a reputable throwing concern. Excellent references. PW-5145, Textile World.

COMPETENT INDUSTRIAL Engineer supervising all standard work in large Carolina Weaving Mill is desirous of change and wants to become permanently associated with reliable Mill or Mills as Manager of Standards. Experience "on the Firing Line" in all phases of time study, job load appraisals and evaluation. Union Contract Negotiations. Piece Work and incentive programs and their application, effective forms of labor cost controls, supplemented very advantageously by actual experience in Manufacturing, Processing and Mill Management. A man with such versatile experience in both fields of the Industry could keep your standards work well organized. References from some of top men in Industry. PW-5590, Textile World.

BROAD CLOTH Superintendent Available. One who has a wide range of experience. Silk, synthetics, cotton, practical in all departments, a technician with business education. Best of references. PW-5850, Textile World.

SUPT. OR Overseer of weaving available. 23 yrs. practical experience. All models Draper and C & K looms. Plain and Fancy weaves. Rayons and cotton. Married. High school graduate. Now employed but desire change. PW-6110, Textile World.

COTTON MILL Superintendent on foreign assignment available mid-October. Textile graduate with 20 years practical experience on cotton and blends, all departments. Quality minded, maintenance and cost conscious. Permanent connection for development desired: Location secondary. Married, strictly sober, honest. References. Replies held confidential. PW-5861, Textile World.

TEXTILE MAN, technical background, mill and New York office experience. Conversant Jacquard and shaft fabrics in synthetic and natural fibers, greige or yarn dyed, from yarn to finished cloth. Costs and production control. Middle aged, excellent references. PW-4989, Textile World.

POSITION WANTED

THROWSTER WITH broad experience and a "knack" for improving various methods and processes would like to change to a progressive concern where industrial-mechanical and textile engineering combine to make a mutual salary and bonus desirable, for details. PW-6172, Textile World.

BUSINESS OPPORTUNITY

For Sale: Screen Printing Plant, complete. BO-6053, Textile World.

WANTED

Wanted immediately, one tumbler washer for laboratory work. Write full details, Paragon Ktg. Mills, 418 E. Collom St., Phila. 44, Pa.

Professional Services

LANCASTER, ALLWINE & ROMMEL
Registered Patent Attorneys

Patent Practice before U. S. Patent Office, Validity and Infringement Investigations and Opinions. Booklet and form "Evidence of Conception" forwarded upon request.

Suite 448, 815-15th St., N. W., Washington 5, D. C.

Just as John Ryle fathered Paterson's silk industry—so MLC brought the idea of "CERTIFIED" Machinery Value to the Textile Industry . . . which means you get your full money's worth in DEPENDABLE Textile Machinery, certified by our reputation for reliability.

HONOR ROLL

LEADING TEXTILE CENTERS OF AMERICA

PATERSON N. J.

Fifth in rank in value of production, Paterson as a textile center was founded largely through the promotion of Alexander Hamilton, Secretary of the Treasury. The first meeting of the planners was held in 1791. The first cotton mill named "Bull Mill" (because it was run by ox-power) was erected in 1793. This enterprise, however, failed. The second mill, run by water-power, was shut down in 1796. It remained idle until 1800, when work was resumed. The first silk mill was started around 1840, in charge of John Ryle, a weaver from Macclesfield, England, who has often been called "the father of the Paterson silk industry."

"Certified for Leadership"

"MLC" Certified Opportunities

No. 4 of a Series

1—72" C & M 2-cylinder Brushing machine
1—39" Textile 5 Roll Calendar
1—41½" Knit goods calender stainless steel rolls with motor Reeves drive
1—50" 2 Roll Textile Hydraulic Calender, 1 Steel & 1 Cotton Roll, Motor Driven.
1—80" Butterworth 6 Bowl Calender, 3 Cotton, 3 Brass Rolls
9—60" x 48" Smith, D & F and Cleveland 3-cyl. card sets, wooden cyls. with auto. feeders, breast. Apperley Intermediate Feeds, 2-bank condensers.
9—60" x 48" Smith, D & F and Cleveland 3-cyl. card sets, wooden cyls. with auto. feeders, breast. Apperley Intermediate Feeds, 2-bank condensers
2—60" x 60" D & F 3-cyl iron card sets with auto feeders breast, broadband interfeeds, 96 end tape condensers
5—C&M Flock Cutters
3—18" D&F Rub Condensers, Double Bank, Double Apron with Spool Racks

All "Certified"

1—54" x 60" D&F 2-cylinder iron shoddy Cards with feeders
1—65" C&M Dewing Machine, motor driven
1—60" Windle 3C Doubler, motor drive
1—64" P&W Doubling & Rolling-up Machine with clock
1—Set of 31-40" face Butterworth Dry Cans.
8—48" V. VL Stainless Steel Dye Jigs Motor Driven
1—Raw Stock dyeing equipment with 4-1000# Morton Dyeing Machines, Blowers, Feeders, Dryers, etc.

All "Certified"

1—Set 8 Textile Vertical 48"x23" Copper Dry Cans
1—36' P&S Loop Dryer width 8'
1—Set 31 Butterworth 23 x 40" Dry Cans
1—36" C&M Duster
1—7' D&F Iron Cone Duster with Feeder
1—18" Copper Basket Extractor
2—26" Tolhurst Extractors, belt driven
1—32" Tolhurst Copper Basket Extractor
2—48" American Humatic Extractors with Copper Baskets Motor Driven
3—60" Tolhurst Copper Basket Extractors

All "Certified"

3—40", 42" E&H Flat Folders with take-up stands
1—Rodney Hunt M3, 2 string fulling mill, belt driven
10—40", 65" card and Napper Grinders
1—83" Roy Napper Roll Grinder
200—40" Draper Model K20 Har Dobby Looms
110—45½" reed space Model E Draper Automatic Looms with lacey tops 3 bank stop motions, warm take-up, belt driven
1—48" C&K 4 x 4 box Loom, 25 harness, belt driven, friction clutch
21—54½" C&K Box 20 & 25 Harness Dobby Looms
51—47 and 52 "R.S." Stafford 2x1 non-auto silk looms, 20 Har Dobbies, motor driven
2—74" Heavy Duck Looms, roller top
12—80" C&K 4 x 1 Auto. 25 harness Veribest Looms, motor driven
14—82" C&K 2 x 1 automatic Looms, 8 harness cam motion, motor driven
8—100 C&K 2x2 Box Auto. Looms with Baker 3-mix attachments, 25 harness gem heads
6—110" C&K 4 x 4 Box Looms, 25 harness, belt driven

All "Certified"

3—66" P&W 60 & 100 yd. Measuring Machines, belt driven
1—12 Pole Smith Drum Skein Mercerizer
1—70" King & Gerber Tubing Machine with Veeder-Root counter
10—240-340-360 SP.J. & B. 1⅞ Ga. Mules
1—392 Spindle Smith 2" Gauge Mule

All "Certified"

2—240 Spindle J & B 2" gauge Mules
100—New Leland & Westinghouse ½ and 1 HP 3/60/220 V Heavy Duty Motors. Also various size Rebuilt Motors
1—61" Woonsocket 2-cylinder Napper, 20 rolls to each cylinder
1—66" Gessner 16 roll single cylinder Napper
1—72" Gessner 18 roll single cylinder Napper
3—80" D&F 20 roll Single and double Acting Nappers

COMPLETE MILL UNIT PROFIT OPPORTUNITIES

- 3—Six to Fourteen Set Woolen Yarn Mills
- A Woolen Piece Goods Finishing Plant
- 3—Worsted Units
- 6—Cotton Mills 3,000-100,000 Spindles 105 Looms Narrow Fabric Weaving Plant for Ribbons, Tapes and Labels. Complete with Warping, Dyeing and Finishing Equipment
- 1—Novelty Yarn Plants
- 1—Twine Manufacturing Plant

All "Certified"

1—30 x 30" Mezerra Wool Opener
1—48" D&F 2-Cyl Wool Opener with Feeder
1—50" Padder two rubber rolls with barrel expander, motor driven
1—40" H&B Single Process Picker with Eveners, Kirschner Beater, Ball Bearing Beaters with Condenser
9—10" Kitson Breaker Pickers, Finisher Pickers and Single Process Pickers, motorized
2—48" C.D. Sargent Burr Pickers
3—48" & 54" Fearnaught Pickers
1—86" Voelker Press Motor Dr.
6—52", 65½, 66, Voelker and Gessner Single and Double Bed Rotary Cloth Presses
3—50 spindle Lindsey-Hyde Adjustable Reels
5—82", 92", 96", and 100" D&F Pin Type Reels, with creel, back stand, neck reed, warp reel beamer and warp compressor
2—60" P&W Single Blade Woolen Shears
1—50" Hermas Shear with C&M Stitcher

All "Certified"

1—66" Parks & Wilson single Blade Plush Shear
11—66½" P&W 2-blade Shears
1—76" C&M Double Blade Shears
1—80½" P&W Single Blade Shears
1—42" Firsching 20-knife Slitting Machine
3—Lowell 2 cylinder Slashers
3—240 SP. Mason Spinning Frames, 2" ring, band drive
2—228 Sp. Whitin Spinning Frames, 2" ring, band drive, with latest model W.A.K. hand clocks
3—240 SP Mason Spinning Frames, 2" ring, band drive
6—120 Sp D&F 5½" Ring Tape Dr. Spinners

All "Certified"

1—30' Textile 46" S.S. Plate Tenter
1—60" C&M Single Brush type Tiger
1008 SP. S.L. 3" Ring Band Driven Twisters
600 SP. F&J. L.S. and H&B 4½" Ring Tape Driven Twisters
3—80 Spindle Hopedale band driven twisters 4½" ring, 5½" ga. Belt driven
1—210 spindle Draper Twister, 2" ring
2—8-string Hemmer Wool Washers
7—100 Sp. Foster Model 12 12A-21A Tube & Cone Winders
1—90 Sp. Foster Model 30 Cone Winder

MANY OTHER UNITS WITH PROFITABLE PRODUCTION POSSIBILITIES. PLEASE OUTLINE YOUR REQUIREMENTS. SEND FOR COMPLETE DETAILED LIST OF MACHINERY FOR SALE.

MACHINERY LIQUIDATING COMPANY

A Dealer of Recognized Reliability

31-33 West 42nd Street — New York 18, N. Y.

DOMESTIC — TELEPHONE PEnnsylvania 6-8014 — EXPORT

WAREHOUSES: Paterson, N. J., 9 Godwin St., Tel. SHerwood 2-9873—Hawthorne, N. J., 35 4th Ave, Tel HAwthorne 7-9661

SPECIALISTS IN SELLING AND PURCHASING TEXTILE MACHINERY, ACCESSORIES AND MILL SUPPLIES

BAY STATE BEST SERVICE

• MACHINERY

10—Whitin 40" cards, 12" Coilers
35—Mason 40" cards, 12" Coilers
1—60x60 D & F Wool card, 3 cyl Tape Condenser & Peralta
3—H & B Single Process Pickers
14—Whitin 9x4½ Intermediates
24—Whitin Model A Long Draft Spinning Frames
3—Atwood 5-B Twisters, 3" ring
100—Deliveries Saco-Lowell Drawing, 12" coilers
1—Foster #101 cane Winder, motor driven
2—Universal #60 G F Winders
1—Saco Lowell Rebuilt 3 cyl. Slasher, 72" Headway
50—Draper Model P Looms, 59½" Reed space, m.d.
75—C & K 53½" R.S. Looms, 2x1, 20 harness dobbies

• BOBBIN EQUIPMENT

40,000 New 10x5 Saco-Lowell Bobbins
10,000 New Fibre head Twister Bobbins
10,000 New 7⅜" A. L. Bobbins
1,000,000 Used, good condition Bobbins
Spools in stock
New or Rebuilt Bobbins To Your Sample

• SUPPLIES—NEW

Fibre Box Trucks
Fibre Roving Cans
Electric Motors
Power Transmission Equipment
Pick Clocks
Yardage Counter

• SUPPLIES—USED

Heddle Frames
Drop Wires
Motors
Extractors, etc.

• REPAIRS

Refinish your old bobbins
Rebush with wood or brass
Rebuild obsolete bobbins
Recut warp for Barber Colman system
Retip your old skewers

COMPLETE UNITS

22,000 Spindle Spinning and weaving unit—machinery only.
70,000 Spindles, 200 cards, 1500 Looms as a whole or in 4 units with or without real estate.
3 Set Woolen Mill, late model machinery, ring spinning, Looms, Finishing.

BTS

LIQUIDATIONS APPRAISALS

"List Your Surplus Equipment with US"

WRITE – WIRE – PHONE–Fall River 7-9031

Prompt Reply

BAY STATE TEXTILE CO.
220 HARTWELL STREET • FALL RIVER, MASS.

IF YOU ARE CONSIDERING

SELLING YOUR PLANT "Consolidated" IS READY TO BUY..

"CONSOLIDATED" TEXTILE DIVISION PRESENTS THESE

OUTSTANDING OFFERINGS *For Sale*

1—Woonsocket 20-roll Double Acting Napper.
1—Butterworth 3-roll 50" Padder.
3—Tolhurst Extractors, 20", 48", 60".
1—James Hunter 2-Hammer Fulling Mill.
5—Copper & S.S. Jacketed Kettles, 25-250 gals.
1—Van Vlaanderen 64" 19-Roll Button Breaker.
2—Stainless Steel 4' Lined Dye Becks.
1—Butterworth 50" 3-roll Calender.
1—2-Roll Doubler or Combiner with motor.
1—James Hunter Rope Soaper.
2—Rodney Hunt Slack Washers.
3—Klauder-Weldon 40 and 20 Stick Skein Dyers.
1—Textile Fin. 4-Burner Singer with Kemp Burners.
1—Van Vlaanderen 60" Stainless Steel Tensionless Dye Jigg.
1—Textile Fin. 20' Ager.
2—Van Vlaanderen 6-Color Ribbon Print Machines.
1—Kettling & Braun 72" Semi-Decater.

Complete Cotton Spinning Plants, 2000 to 15,000 spindles.
Complete Rayon Weaving Plant.
Complete Screen Printing Plant.
Complete Plush Mill.

4—Three Ton Kiers.
2—Rodney Hunt Piece Goods Dye Kettles.
3—C & K 54" S-2 Auto. bobbin Changing Looms.

Men's Complete Hosiery Plant.
Fibre Processing Equipment.
Complete Blanket Mill.
Hand Weaving Mill (Men's Neckwear).
Complete Dyeing and Finishing Plant.

1—NEW Stokes Cutter.
1—H & W Yarn Conditioner.
1—Prince-Wmith Worsted Redoubler.
2—Hunter Double Cylinder Wool Openers.
NEW Card Clothing for 48" Cards.
1—Butterworth 90' Tenter Frame 60".
1—Hunter Fisher 9' Rotary Feed.
8—Schaum & Uhlinger Webbing Looms.
1—Proctor & Schwartz Cotton Felt Slitter.
1—Cocker High Speed Warper.
2—Foster #30 Cone Winders, 100 spindles.
1—Curtis & Marble 48" Picker, Apron Feed.
1—Pressure Yarn Dryer for Franklin Springs.
3—Saco-Lowell West Twisters, large rings.
1—Proctor & Schwartz Hurricane Dryer.

WE BUY AND SELL FROM A COMPLETE PLANT TO A SINGLE ITEM. SEND US YOUR LISTINGS OF IDLE MACHINERY.

THE KEY TO SAVING TIME AND MONEY
FOR OVER A QUARTER CENTURY A SYMBOL OF CONFIDENCE
CONSOLIDATED PRODUCTS COMPANY, INC.

Address all inquiries for Textile Machinery to
TEXTILE DIVISION
33-41 BERGEN STREET
PATERSON 2, N. J.
Phone ARmory 4-6540

NEW YORK OFFICE: 15 PARK ROW, NEW YORK 7, N Y. PHONE BARCLAY 7-0600

WE BUY AND SELL SINGLE ITEMS TO COMPLETE PLANTS

SEARCHLIGHT SECTION

DYEING AND FINISHING

1—Tenter Frame, 9'x100", with housing
1—Set 8 Copper Dry Cans, 72"
1—P&W Napper, 62' face
8—Dye Becks, 12'-14' long, with reels
1—National Loop Dryer, 84" wide
1—Van Vlaanderen Tuber, 50" motor
1—Friction Calender, 3 rolls, 50"
2—Fletcher Extractors, 48"
6—Morrison Dye Jiggs, 50"
1—Set 42 S.S. Dry Cans, 50"
1—Hercules Extractor, 60"
1—Smith-Drum Rotary Dye, 100 lbs.
1—Hydraulic Calender, 3 rolls, 60"
1—P&S Skein Hurricane Dryer
1—Van Vlaanderen Calender, 3 rolls, 46½"
1—Woonsocket Napper, 36 rolls, 50"
1—Werner Palmer Quetsch Unit, 48" width
1—P&S Loop Dryer, 50' long
1—Morrison Rayon Calender, 50"
1—Grand Rapids 3 roll Steam Calender
1—K&G Embossing Calender
1—Butterworth Calender, 3 bowl, 50"
3—John Hope Pantograph, 51" width
1—Butterworth Hydraulic Baling Press
1—Rotary Plate Singer, 50"
1—Color Kettle, 30 gal.
1—Van Vlaanderen Padder, 50"

COMPLETE MILLS

Print Cloth Mill—17,000 spindles
Cotton Spinning & Weaving, 15,000 spindles, 400 looms
Cotton Spinning & Weaving, 12,200 spindles, 300 looms
Cotton Spinning, 3,500 spindles
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110—Draper Hopedale Rayon, 40"
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1—Butterworth Hydraulic Baling Press
2—Worsted Cards with Gill Box
3—Furbush Cards, 48x60
1—D&F 46x48 Wool Card, iron
50—H&B 45" Cards
27—H&B 40" Cards
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35—H&B Spinning Frames, 256 sp. 3" ga.
24—F&J Spinning Frames, 216 sp. 3" ga.
4—Whitin 7x3½ Roving Frames, 176 sp.
2—Saco-Pettee 10x5 Roving Frames, long draft
2—J&B Mules, 360 sp. 2¼" ga.

WINDING

12—Universal Winders #90, 20 sp.
2—Foster Winders #12, 40 sp.
3—Saco-Lowell Lap Winders, 9"
2—Foster Winders #101, 80 sp.
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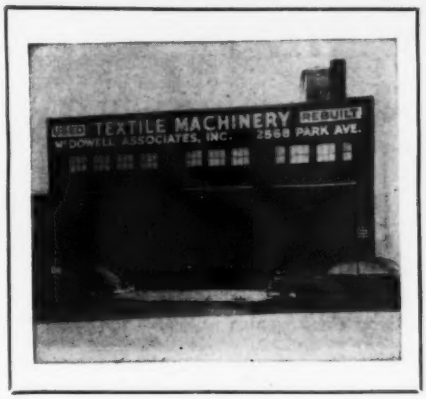

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5 Foster and Universal Cone Winders, motorized.

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22—Model "E" Drapers, 52½" Reedspace
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1—96" Ceiling Folder
2—130"
1—82"
1—74" Swing Folder attached to scutcher

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1—50" 2 Roll Pad, screw and lever set, 18" diam., 3/8" rubber, heavy pad
1—66" 2 Roll Pad, screw and lever
1—11" diam. 3/4" rubber; 1—12" diam. 3/8" rubber
1—52" 2 Roll Rubber Pad, screw pressure
1—Rubber Roll 1/2" thick; 1—Roll 3/8" rubber
1—90" 2 Roll Pad
1—Roll Brass, 12" diam.; 1—Roll Rubber, 15" diam.

JIGS

12—55" Dye Jigs, wooden boxes, bevel gears, finger clutches, rubber beams
2—50" Dye Jigs, stainless steel lined, bevel gears
3—50" Dye Jigs, wooden boxes, bevel gears, finger clutches, rubber beams
6—54" Dye Jigs, stainless steel lined, stainless steel roller bearing beams, motor driven (Butterworth)
2—Morrison tensionless stainless steel Dye Jigs, variable speed, motor driven, 50"

QUETCHES

1—Johnson Van Vlaanderen 2 Roll Quetch, 50"
1—Roll Rubber 6" diam.; 1—Roll Rubber 7" diam.
1—54" 2 Roll Quetch Fafnir, ball bearings, rolls brass 6" diam., screw pressure, movable copper pan, brass guide roll, 1 brass roll in pan suitable for direct motor drive by groove pulley, slip belt batcher.

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1—Closed pressure Copper Tank, 138 gals. capacity
1—100 gal. Steel Tank with agitator and cover
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3—Tubers, width 36" — 41 1/2" — 41 1/2", Schoefield make
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1—100", same as above
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2—40" Inspecting Machine
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1—2 Steel Roll Winder, 76"
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1—3 Plunger Watson & Stillman Hydraulic Pump
1—Single Plunger Watson Stillman Pump

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11—Copper Dry Cans, 72" within rings
37—Steel Tinned, 130" wide, siphon type, horizontal or vertical stands
30—Steel Tinned, 90" wide, removable journals, siphoned, vertical stands or horizontal; 8—Cans with buckets and swing folder
30—Steel Tinned, 120" wide, removable journals; 2—3 roll brass Mycock expanders and 120" swing folder, vertical or horizontal stands
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1—Singer Sewing Machine and table for darning
1—Singer Sewing Machine and Railway
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1—41" Railway Sewing Machine with Winder
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42—Hangers and
13—Couplings
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4—#2 Reeves Drives
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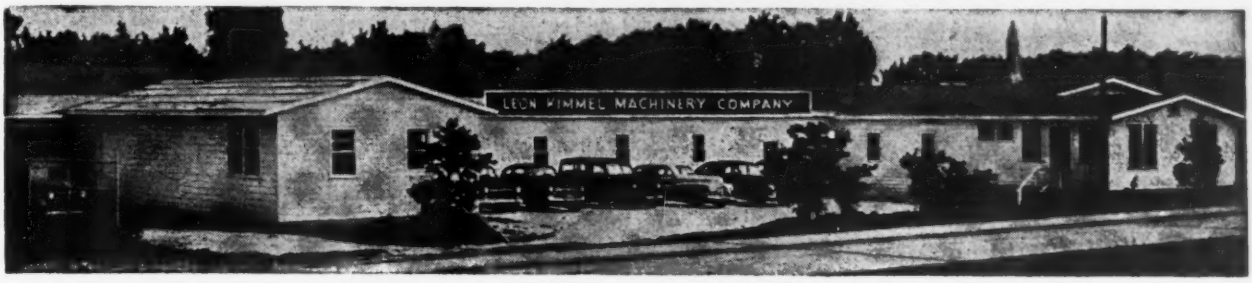

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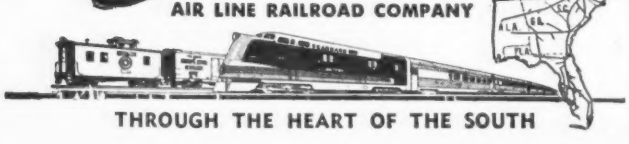

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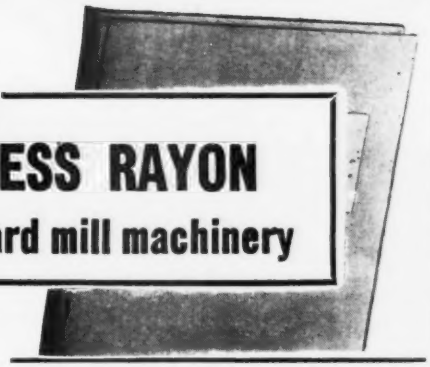

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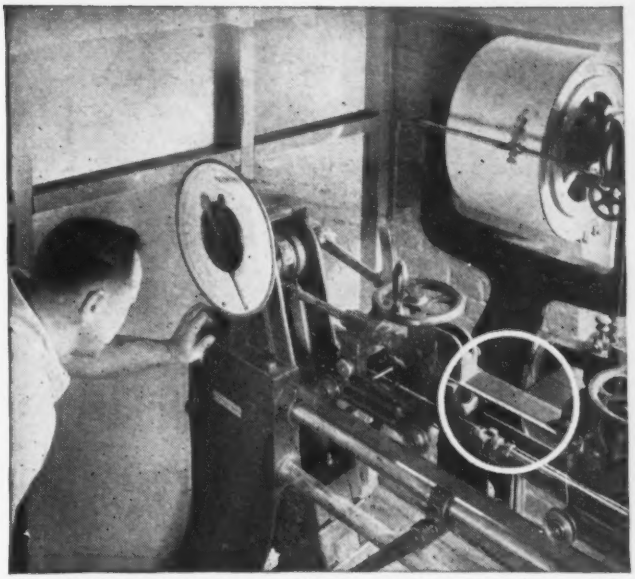

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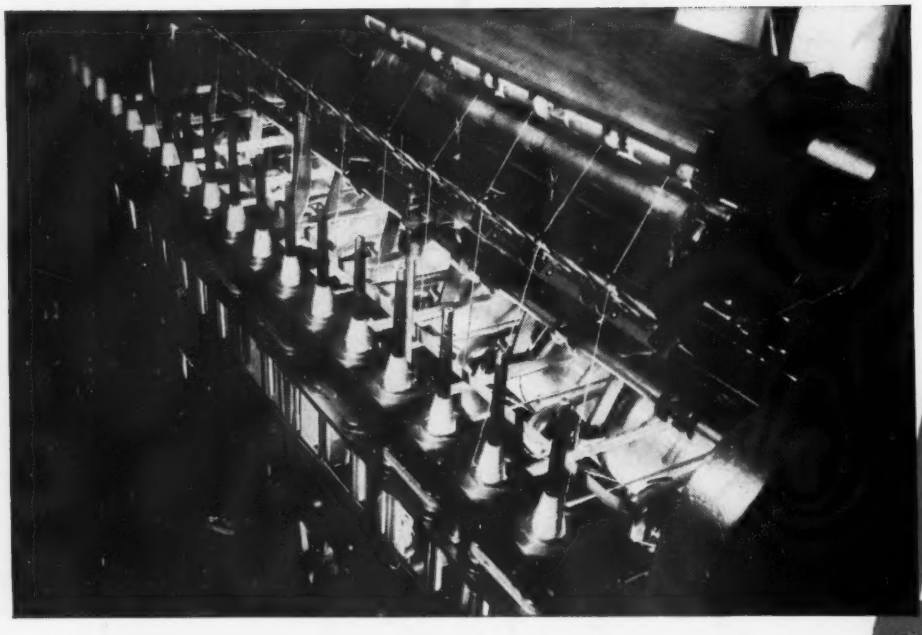

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